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SOIL SURVEY

RED CREEK AREA

SWEETWATER COUNTY, WYOMING

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

In Cooperation with

UNITED STATES DEPARTMENT OF INTERIOR

BUREAU OF LAND MANAGEMENT

April 1975

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Major field work for this soil survey was performed during August through October 1973. Soil names and descriptions were approved in 1974. Unless otherwise indicated, statements in the publication refer to the conditions in the area in 1973. This survey was made cooperatively by the Soil Conservation Service and the Bureau of Land Management.

HOW TO USE THIS SOIL SURVEY

This soil survey contains information that can be applied in managing rangelands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of the Red Creek Area are shown on the soil survey field sheets for this soil survey. The field sheets are aerial photographs, and the number on each sheet corresponds with a number on the Index to Field Sheets.

On each field sheet soil areas are outlined and are identified by symbols. All areas marked with the same symbol contain the same kinds of soils as defined under "Description of Soils." The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the mapping units of the survey area by map symbol and gives the capability classification of each. It also shows the page where each soil is described and the range site in which the soil has been placed.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

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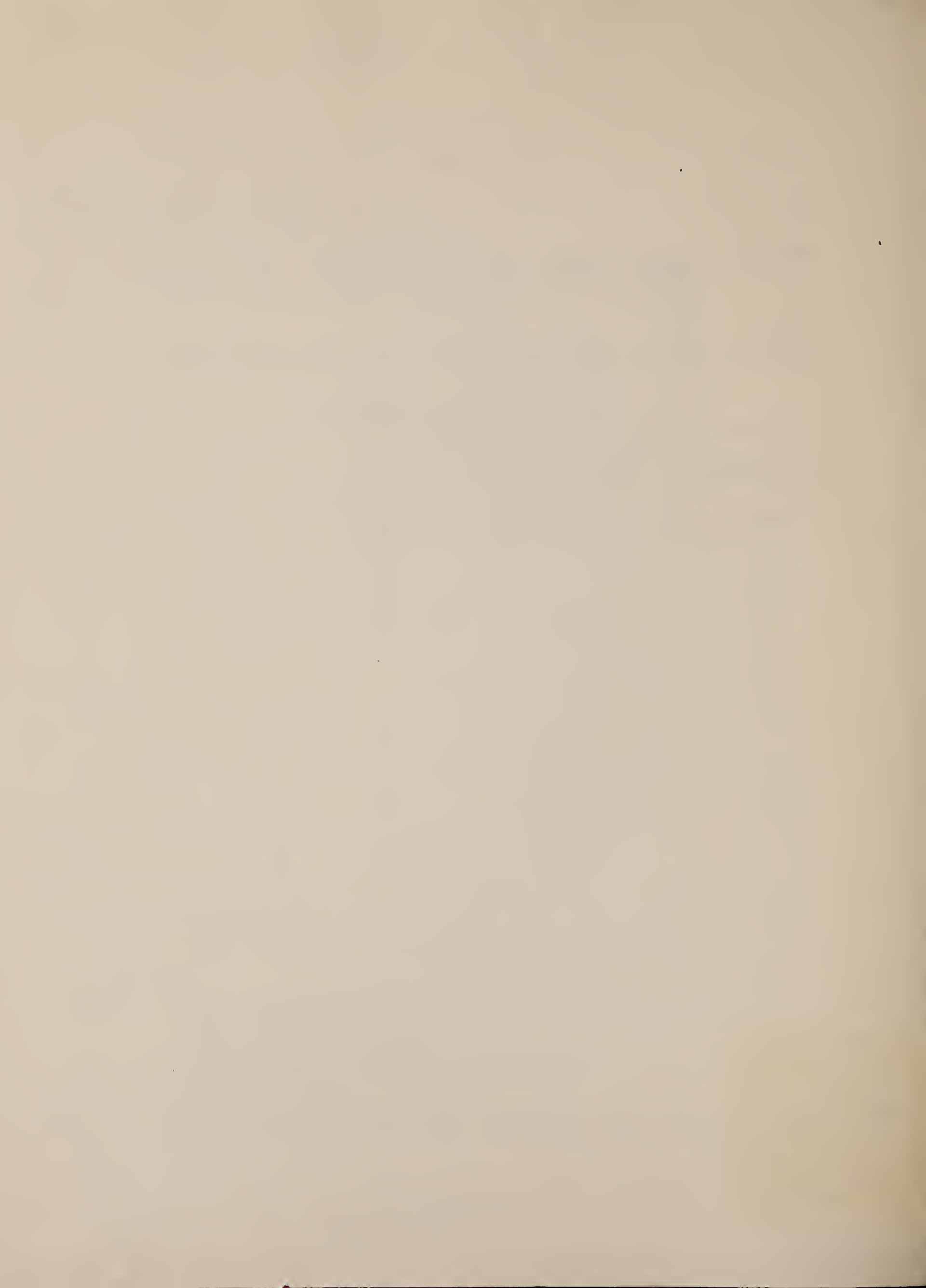
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SOIL SURVEY OF RED CREEK AREA, SWEETWATER COUNTY, WYOMING

By Halvor B. Ravenholt, Soil Conservation Service 1/

Introduction

The Red Creek Area consists of privately-owned, Federally-owned, and State-owned land located in south central Sweetwater County, Wyoming.

The area covers about 70,000 acres. The principal use of the lands within the area is for rangeland. Other uses include wildlife habitat.

Elevations range from about 6,300 feet, where Red Creek crosses the state line into Utah, to 9,550 feet, the highest point on Pine Mountain. The area is the portion of the Red Creek watershed in Wyoming; it also includes about 1,100 acres of the watershed that extends into northwestern Colorado, and about 340 acres extending into Utah. The tri-state monument where Wyoming, Colorado, and Utah, meet is located just within the southern boundary of the watershed. The new East Flaming Gorge Highway passes through the northwest part of the area.

The Red Creek Area is divided into two precipitation zones and frost-free season zones. The 10 to 14 inch precipitation zones and 60 to 90 day frost-free zones generally occur below 7,500 feet elevation; and the soils in these zones are all light colored. The 15 to 19 inch precipitation zones and 50 to 70 day frost-free zones generally occur above 7,500 feet elevation, and most of the soils in these zones are dark colored, some light colored soils also occur at these higher elevations. Generally speaking, the junipers are associated with the lower elevations and precipitation zones, and the aspen with the higher elevations and precipitation zones.

How This Survey Was Made

Soil Scientists made this survey to learn what kinds of soil are in the Red Creek Area, where they are located, and how they can be used. The soil scientists went into the area knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers or horizons in a soil: it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

1/ Jim R. Stephens assisted in the field work. Clarence J. Fowkes and Charles McAfee assisted in the field correlation. All are soil scientists or range conservationists with the Soil Conservation Service.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide uniform procedures. The soil series and the soil phase are the categories of soil classification most used in a local survey.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town, geographic feature, or other feature near the place where a soil of that series was first observed and mapped or a name is coined. Redcreek and McCort, for example are the names of two soil series whose type locations are in the Red Creek Area. All the soils in the United States having the same series name are essentially alike in those characteristics that affect their behaviour in the undisturbed landscape. Soils of one series can differ in texture of the surface layer and in slope stoniness, or some other characteristic that affects their use. On the basis of such differences a soil series is divided into phases. The name of a soil phase indicates a feature that affects management.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils, soil associations and complexes on aerial photographs. These photographs show woodland, drainages, landscape features, and other details that help in drawing boundaries accurately.

The areas shown on the field sheets are called mapping units. In some areas a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent because it is not practical to show all the small, scattered bits of soil that have been seen within an area that is dominantly of a recognized soil phase.

Most mapping units of this survey area are made up of soils of different series or of different phases within one series. Two such kinds of mapping units are shown on the soil map of the Red Creek Area - soil complexes and soil associations.

A soil complex consists of areas of two or more soils so intricately mixed or so small in size that they cannot be shown separately on the soils map. Each area of a complex contains some of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. Generally, the name of the soil complex consists of the names of the dominant soils joined by a hyphen. Redcreek-Thermopolis complex is an example.

A soil association is made up of adjacent soils that occur as areas large enough to be shown individually on the soil map but are shown as one unit because the time and effort of delineating them separately cannot be justified. There is a considerable degree of uniformity in pattern and relative extent of the dominant soils joined by a hyphen. Scout-Uinta association is an example.

In most areas surveyed there are places where the soil material is so rocky, so shallow, so severely eroded, or so variable that it has not been classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names such as "Rock outcrop." The mapping unit "Fluvaquents and Fluvents" contains so many differing soil series and in such small amounts it is not practical to classify these soils as individual series but rather list the two suborders of the taxonomic classification system into which practically all the soils fit.

While a soil survey is in progress, soil scientists take soil samples needed for laboratory measurements and for engineering tests. Laboratory data from the same kind of soil in other places are also assembled.

Soil scientists observe how soils behave when used as a growing place for native and cultivated plants and as material for structures, foundations for structures, or covering for structures. They relate this behavior to properties of the soils. For example, they observe that filter fields for onsite disposal of sewage fail on a given kind of soil, and they relate this to the slow permeability of the soil or its high water table. They see that streets, road pavements, and foundations for houses are cracked on a named kind of soil; and they relate this failure to the high shrink-swell potential of the soil material. Thus, they use observation and knowledge of soil properties, together with available research data, to predict limitations or suitability of soils for present and potential uses.

After data have been collected and tested for the key, or benchmark, soil in a survey area, the soil scientists set up trial groups of soils. They test these groups by further study and by consultation with agronomists, range conservationists, engineers and others. They then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under current methods of use and management.

Descriptions of the Soils

This section describes the soil series and mapping units in the Red Creek Area. Each soil series is described in detail and then, briefly, each mapping unit in that series. Unless it is specifically mentioned otherwise, it is to be assumed that what is stated about the soil series holds true for the mapping units in that series. Thus, to get full information about any one mapping unit it is necessary to read both the description of the mapping unit and the description of the soil series to which it belongs.

An important part of the description of each soil series is the soil profile; that is, the sequence of layers from the surface downward to rock or other underlying material. Each series contains two descriptions of this profile. The first is brief and in terms familiar to the layman. The second is much more detailed and is for those who need to make thorough and precise studies of soils. Color terms are for dry soil unless otherwise stated. The profile described in the series is representative for mapping units in that series. If the profile of a given mapping unit is different from the one described for the series, these differences are stated in describing the mapping unit or they are differences that are apparent in the name of the mapping unit.

As mentioned in the section, "How This Survey Was Made", not all mapping units are members of a soil series. Rock outcrop, for example, does not belong to a soil series, but, nevertheless, is listed in alphabetical order along with the soil series.

Following the name of each mapping unit is a symbol in parentheses. This symbol identifies the mapping unit on the soil map. Listed at the end of each description of a mapping unit is the range site in which the mapping unit has been placed. The page for the description of the mapping unit, the range site, or other interpretative group can be found by referring to the "Guide to Mapping Units" at the back of this survey.

The acreage and proportionate extent of each mapping unit are shown in Table 1. Many of the terms used in describing soils can be found in the Glossary at the end of this survey, and more detailed information about the terminology and methods of soil mapping can be obtained from the Soil Survey Manual.

TABLE 1

Approximate Acreage and Proportionate Extent of Mapping Units

Mapping Unit	Soil Name	Acreage	Percent of Area
500	Aquents and Fluvents	520	0.7 1
501	Tisworth fine variant-Ravalli complex	420	0.6 1
502	Goslin Complex	1,030	1.5 2
503	Almy complex	1,530	2.2 2
504	Castello-Brownsto association	3,660	5.2 5
505	Cragosen-Brownsto-Thermopolis Complex	3,340	4.8 5
507	Tisworth-Goslin complex	1,220	1.7 2
509	Redcreek-Thermopolis complex	13,600	19.4 19
512	Brownsto-Goslin complex	1,040	1.5 2
513	Spool-Rock outcrop complex	1,240	1.8 2
523	Fiveoh association	2,700	3.9 4
524	Brownsto-Fiveoh association	1,400	2.0 2
526	Thermopolis-Rock outcrop complex	5,240	7.6 8
701	McCort gravelly sandy loam	390	0.6 1
702	Scout-Uinta association	1,200	1.7
703	Cheadle complex	1,360	1.9
705	Pishkun complex	3,560	5.1
706	Teemat-Teeler complex	640	0.9
707	Libeg-Amsden-Teemat complex	4,400	6.3
708	Pishkun coarse variant association	1,140	1.6
709	Southace-Teemat-Teeler complex	9,650	13.8
710	Pishkun-Rock outcrop association	3,390	4.8
715	Jenkinson-Roxal association	1,260	1.8
R3	Rock outcrop	300	0.4
R4	Rock outcrop-Redwash complex	4,430	6.3
R6	Rock outcrop-Southace association	1,350	1.9
Total		70,000	100.0

ALMY SERIES

The Almy series are well drained soils formed in alluvium on gently to moderately sloping alluvial fans. Slopes are 3 to 6 percent. Elevation is 6,800 to 7,500 feet. Vegetation is big sagebrush, few scattered greasewood, bottlebrush squirreltail, Indian ricegrass and Sandberg bluegrass. Precipitation is 10 to 14 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is reddish brown fine sandy loam about 6 inches thick. The subsoil is reddish brown silty clay loam or clay loam about 19 inches thick. The substratum is reddish brown fine sandy loam to 60 inches.

This soil has moderate permeability. Available water capacity is 6.2 to 8.4 inches. Effective rooting depth is 60 inches or more. There are common fine and medium roots to 16 inches, few fine and medium roots to 40 inches.

Representative profile is located 1.5 mile southeast of Red Creek Ranch in the SW $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 1, T. 12 N., R. 104 W.

A1	0-6 inches	Reddish brown (5YR 5/3) fine sandy loam, dark reddish gray (5YR 4/2) moist; moderate thin platy; soft, very friable, slightly sticky, slightly plastic; slight effervescence on surface; moderately alkaline (pH 8.0); clear wavy boundary.
B21t	6-9 inches	Reddish brown (5YR 5/3) silty clay loam, reddish gray (5YR 4/2) moist; moderate thin platy; slightly hard, friable, sticky, plastic; common fine tubular pores; moderately alkaline (pH 8.0); clear wavy boundary.
B22t	9-14 inches	Reddish brown (5YR 5/3) silty clay loam, reddish gray (5YR 4/2) moist; weak medium prismatic parting to moderate fine subangular blocky; patchy thin clay films; hard, friable, very sticky, plastic; common fine tubular pores; moderately alkaline (pH 8.2); clear wavy boundary.
B3ca	14-25 inches	Reddish brown (5YR 5/3) clay loam, reddish brown (5YR 4/3) moist; moderate medium and fine subangular blocky; slightly hard, friable, sticky, plastic; common fine tubular pores; strong effervescence; strongly alkaline (pH 8.6); gradual wavy boundary.
Cca	25-60 inches	Reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/4) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; few fine tubular pores; strong effervescence; strongly alkaline (pH 8.6).

Content of coarse fragments range from 0 to 15 percent. Depth of solum ranges from 15 to 26 inches.

The color of the A1 horizon has hues of 5YR or 7.5YR, values of 5 or 6 dry and 4 or 5 moist, and chromas of 2 or 3.

The color of the B2t horizon has hues of 5YR or 7.5YR, values of 5 or 6 dry and 4 moist, and chromas of 3 or 4. Texture is silty clay loam or clay loam. Reaction ranges from pH 7.5 to 8.2.

The color of the C horizon has hues of 5YR or 7.5YR. Texture is fine sandy loam, sandy loam, loam, or light clay loam. Reaction ranges from pH 7.0 to 8.6.

Almy complex (503): This complex consists of about 70 percent Almy fine sandy loam, 3 to 10 percent slopes, and about 15 percent Tisworth sandy loam, 3 to 10 percent slopes. These soils occupy alluvial fans along Red Creek and Little Red Creek; predominately in the general area of Red Creek Ranch. Included are minor areas of Goslin, Fiveoh, and Redcreek soils and a few Rock outcrops, totaling about 15 percent of the unit.

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for irrigated hay meadows, rangeland, and wildlife habitat.

Almy soils: Loamy, 10 to 14 inch precipitation zone, range site.

Tisworth soils: Saline Upland, 10 to 14 inch precipitation zone range site.

AMSDEN, GRAVELLY VARIANT

The Amsden gravelly variant soils series are well drained, formed in glacial till or alluvium on steep sideslopes. Slopes are 20 to 40 percent, mostly north facing. Elevation is 7,500 to 8,200 feet. Vegetation is big sagebrush, serviceberry, snowberry, lanceleaf rabbitbrush, Kentucky bluegrass, letterman needlegrass and basin wildrice. Precipitation is 14 to 18 inches. Mean annual soil temperature is about 42°, and the frost-free season is 50 to 70 days.

Typically, the surface layer is reddish gray gravelly loam about 12 inches thick. The subsoil is reddishbrown gravelly clay loam to 60 inches. This soil has moderately slow permeability. Available water capacity is 7.5 to 10 inches. Effective rooting depth is 60 inches or more. There are many fine medium and coarse roots to 10 inches, common fine and medium roots to 40 inches, and few fine and medium roots to 60 inches.

Representative profile along dirt road 1 mile north of state line in the SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Sec. 15, T. 12 N., R. 104 W.

A11	0-3 inches	Dark reddish gray (5YR 4/2) gravelly loam, dark reddish brown (5YR 3/2) moist: moderate fine granular, soft, very friable, slightly sticky, slightly plastic: mildly alkaline (pH 7.6): clear wavy boundary.
A12	3-12 inches	Dark reddish gray (5YR 4/2) gravelly loam, dark reddish brown (5YR 3/2) moist: weak medium subangular blocky, slightly hard, friable, sticky, plastic: mildly alkaline (pH 7.8): clear wavy boundary.

B1	12-31 inches	Reddish brown (5YR 5/3) gravelly clay loam, reddish brown (5YR 3/2) moist: weak medium subangular blocky, hard, friable, very sticky, plastic: mildly alkaline (pH 7.8); gradual wavy boundary.
B22t	21-30 inches	Reddish brown (5YR 4/4) gravelly clay loam, reddish brown (5YR 4/3) moist; moderate coarse subangular blocky parting to moderate fine subangular blocky; continuous thin clay films; common fine tubular pores; mildly alkaline (pH 7.8); gradual wavy boundary.
B23t	30-44 inches	Reddish brown (5YR 4/4) gravelly clay loam, reddish brown (5YR 4/3) moist; moderate coarse subangular blocky parting to moderate fine subangular blocky; patchy thin clay films; hard, friable, very sticky, plastic; common fine tubular pores; mildly alkaline (pH 7.8); clear wavy boundary.
Cca	44-60 inches	Reddish brown (5YR 5/4) gravelly clay loam, reddish brown (5YR 4/3) moist; massive; slightly hard, friable, very sticky, plastic; few fine tubular pores; strong effervescence; moderately alkaline (pH 8.4).

Content of coarse fragments ranges from 0 to 35 percent in the A and B horizons, and 15 to 50 percent in the C horizons; which is typically about 20 percent gravel and 10 percent cobble in the A and B horizons with some stones included in the C horizons.

The color of the A horizons have hues of 5YR to 10YR, values at 3 to 5 dry and 2 or 3 moist; and chromas of 2 or 3. Textures are loam, gravelly loam, sandy loam or gravelly sandy loam.

The color of the B horizons have hues of 5YR or 7.5YR, values of 4 to 6 dry and 3 to 5 moist, and chromas of 2 to 4.

The color of the C horizons have hues of 5YR or 7.5YR. The rock fragment content includes stones, cobble, and gravel.

The Amsden, gravelly variant soils are mapped with Libeg and Teeman soils.

Aquents and Fluvents (500): This unit consists of poorly to moderately well drained, reddish sandy soils with some gravel bars. It occurs along Red Creek from the state line up to the vicinity of Red Creek Ranch, a total length of 18 miles and an average width of about 600 feet. Slopes are 0 to 3 percent for most of the area, broken by short low streambanks. Elevation is 6,300 to 7,000 feet. Soil textures are sand, loamy sand, and sandy loam, mostly reddish in color with minor areas of grayish-brown soils. The water table varies from at the surface to about five feet. About 50 percent of the soils are Aquents and about 50 percent are Fluvents. The vegetation is mainly big sagebrush, basin wildrye, western wheatgrass, rubber rabbitbrush, plantain, and sedges.

Runoff is slow and the erosion hazard is slight, except for streambank cutting during periods of peak runoff.

These soils are used primarily for rangeland and wildlife habitat.

Aquents: Subirrigated, 10 to 14 inch precipitation zone, range site.

Fluents: Overflow, 10 to 14 inch precipitation zone, range site.

BROWNSTO SERIES

The Brownsto series are well drained soils formed in gravelly alluvium on gently sloping to steep alluvial fans and terraces. Slopes are 3 to 30 percent. Elevation is 6,400 to 7,800 feet. Vegetation is black sagebrush, some big sagebrush, prickly pear cactus, buckbrush, bluebunch wheatgrass, prairie junegrass, phlox, and nailwort. Precipitation is 10 to 14 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is brown gravelly sandy loam about 10 inches thick. The subsoil and substratum are very pale brown, very gravelly sandy loam to 60 inches.

This soil has moderately rapid permeability. Available water capacity is 2.7 to 5.0 inches. Effective rooting depth is 60 inches or more. Typically, the profile has many fine and few medium roots to 10 inches and few fine and few medium roots to 25 inches.

Representative profile is located southeast of highway along a dirt roadcut in SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 23, T. 13 N., R. 105 W.

A11	0-6 inches	Grayish brown (10YR 5/2) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine granular; soft, very friable, slightly sticky, slightly plastic; 30 percent gravel slight effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
A2	6-10 inches	Brown (10 YR 5/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky soft, very friable, slightly sticky, very slightly plastic; 40 percent gravel; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
C1ca	10-25 inches	Very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; weak very fine subangular blocky; hard, very friable, slightly sticky, slightly plastic; 30 percent gravel, 15 percent cobble, and 5 percent stones; violent effervescence; moderately alkaline (pH 8.4); lime crusts on underside of gravel; 30 percent CaCO ₃ equivalent, gradual wavy boundary.
C2ca	25-60 inches	Very pale brown (10YR 7/4) very gravelly sandy loam brown (10YR 5/3) moist; loose, very friable, slightly sticky, slightly plastic; 30 percent gravel, 15 percent cobble, and 5 percent stones; strong effervescence; moderately alkaline (pH 8.0); thin lime coatings on some gravel.

The content of coarse fragments ranges from 15 to 50 percent in the surface A horizons and 35 to 75 percent in the substrata C horizons. The color of the profile throughout has hues of 7.5YR or 10YR. Reaction ranges from pH 7.9 to 8.4.

Brownsto-Goslin complex (512): This complex consists of about 70 percent Brownsto gravelly sandy loam, 6 to 15 percent slopes, and about 25 percent Goslin fine sandy loam, 6 to 10 percent slopes. These soils occupy the alluvial fans of the south facing slopes of Richards Mountain and Teepee Mountain. The Goslin soils occur on the lower portions of the fans intermingled with the Brownsto soils. Included also are minor areas of Fiveoh soils, totaling 5 percent or less of the mapping unit.

Runoff is medium and the erosion hazard is moderate.

These soils are used for rangeland and wildlife habitat.

Brownsto soils: Sandy, 10 to 14 inch precipitation zone, range site.

Goslin soils: Loamy, 10 to 14 inch precipitation zone, range sites.

Brownsto-Fiveoh association (524): This association consists of about 40 percent Brownsto gravelly sandy loam, 6 to 30 percent slopes, about 30 percent Fiveoh sandy loam, 3 to 10 percent slopes, about 10 percent Almy fine sandy loam, 3 to 6 percent slopes, and about 15 percent Thermopolis sandy loam, 3 to 30 percent slopes. This association occupies some of the alluvial fans on the lower north and west slopes of Teepee Mountain. Brownsto soils occur mostly on the upper portion of the fan. Fiveoh and Almy soils occur mostly on the lower portion of the fans. Thermopolis soils occur along the ravines and gullies. Included totaling about 5 percent are areas of Rock outcrop (shale) and a soil similar to Almy except it has bedrock at 20 to 40 inch depth.

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for rangeland and wildlife habitat.

Brownsto soils: Sandy, 10 to 14 inch precipitation zone, range site.

Fiveoh soils: Loamy, 10 to 14 inch precipitation zone, range site.

CASTELLO SERIES

The Castello Series are well-drained, high lime soils formed in alluvium on gently and moderately sloping alluvial fans and terraces. Slopes are 2 to 10 percent. Elevation is 6,500 to 7,500 feet. Vegetation is mainly black sagebrush, bluebunch wheatgrasses, and other grasses. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is pinkish-gray gravelly sandy loam about 9 inches thick. The subsoil and substratum are light pinkish-gray gravelly sandy loam to 60 inches.

This soil is moderately permeable. Available water capacity is 5.4 to 7.2 inches. Effective rooting depth is 60 inches or more.

Typically, this soil has many fine and few medium roots to 9 inches and few fine and few medium roots to 33 inches, with very few roots below this depth. The high lime content of the Clca and C2ca horizons restrict normal root growth.

Representative profile is located 50 feet west of dirt road in SE $\frac{1}{4}$ of NW $\frac{1}{4}$ Sec. 34. T. 13 N., R. 105 W.

A1	0-3 inches	Pinkish gray (7.5YR 6/2) gravelly sandy loam, brown (7.5YR 4/2) moist; moderate fine granular; slightly hard, very friable, slightly sticky, slightly plastic; 25 percent gravel; slight effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
AC	3-9 inches	Pinkish gray (7.5YR 6/2) gravelly sandy loam, brown (7.5YR 4/2) moist; weak medium and fine subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; 25 percent gravel; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
ClCa	9-33 inches	Pinkish white (7.5YR 8/2) gravelly sandy loam, pinkish gray (7.5YR 7/2) moist; weak very fine subangular; blocky; slightly hard, friable, slightly sticky, slightly plastic; 25 percent gravel; violent effervescence; strongly alkaline (pH 8.2); thin lime coatings on gravel and considerable marl-like lime; clear wavy boundary.
C2ca	33-60 inches	Light gray (10YR 7/2) gravelly sandy loam, brown (10YR 5/2) moist; massive; soft, very friable, slightly sticky, nonplastic; 25 percent gravel; strong effervescence; moderately alkaline, (pH 8.4); thin lime crusts on underside of gravel.

The content of coarse fragments throughout the profile ranges from 15 to 35 percent. Conductivity ranges from 1 to 5 millimhos in the C horizons. The color of the A1 horizons have hues of 7.5YR or 10YR values of 5 or 6 dry and 4 or 5 moist, chromas are 2 or 3. Reaction ranges from pH 7.9 to 8.4. The color of the C horizon has hues of 7.5YR or 10YR. Reaction ranges from pH 7.9 to 8.8.

Castello-Brownsto association, (504): This association consists of about 55 percent Castello gravelly sandy loam, 3 to 10 percent slopes and about 35 percent Brownsto gravelly sandy loam, 3 to 10 percent slopes. These soils occupy the gently moderately sloping high broad alluvial fans between Little Mountain and Red Creek. The Brownsto soils occur predominantly on the upper part of the fans and the Costello soils predominantly on the lower parts. Included are about 10 percent of steep-sided ravines; the soils in these ravines are Brownsto, Cragosen and Thermopolis, all on 15 to 35 percent slopes.

Runoff on the broad sloping fans is medium and the erosion hazard is moderate.

These soils are used for rangeland and wildlife habitat.

Sandy, 10 to 14 inch precipitation zone, range site.

CHEADLE SERIES

The Cheadle series are well drained, shallow soils formed in residuum from sandstone on gently sloping to steep ridge tops and sideslopes. Slopes are 3 to 50 percent. Elevation is 7,500 to 8,400 feet. Vegetation is black sagebrush, winterfat, phlox, nailwort, rabbitbrushes, true mountain mahogany, bluebunch wheatgrass, prairie junegrass and locoweed. Precipitation is 13 to 16 inches. Mean annual soil temperature is about 43°F., and the frost-free season is 60 to 90 days.

Typically, the profile is grayish brown and pale brown very channery sandy loam about 18 inches thick, underlain by sandstone.

This soil has moderately rapid permeability. Available water capacity is 0.2 to 1.2 inches. Effective rooting depth is 6 to 20 inches, to the bedrock. This soil has many fine and few medium and coarse roots to 10 inches and few roots below to the bedrock.

Representative profile is above the rim and 150 feet east of small waterhole in the NW $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 30, T. 13 N., R. 103 W.

All	0-4 inches	Grayish brown (10YR 5/2) very channery sandy loam, dark brown (10YR 3/3) moist: weak fine granular: soft very friable, slightly sticky, nonplastic: 55 percent fine channery; slight effervescence: moderately alkaline (pH 8.2): clear wavy boundary.
A12	4-10 inches	Grayish brown (10YR 5/2) very channery sandy loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky parting to weak very fine subangular blocky; soft, very friable, slightly sticky, nonplastic; 55 percent fine channery; slight effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
C1	10-18 inches	Pale brown (10YR 6/3) very channery sandy loam, brown (10YR 4/2) moist; weak very fine subangular blocky; soft, very friable, slightly sticky, nonplastic; 60 percent fine channery; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
R	18 inches	Fractured hard sandstone.

Content of coarse fragments ranges from 35 to 75 percent channery, 90 percent of it less than $\frac{1}{2}$ inch. Depth to bedrock ranges from 6 to 20 inches.

Cheadle complex (703): This complex consists of about 45 percent Cheadle very channery sandy loam, 3 to 20 percent slopes, and about 40 percent Starley, very shallow variant, channery loam, 3 to 20 percent slopes. These soils occupy the ridges and spurs on the west side of Pine Mountain, along the north rim of Red Creek Basin, and on the southeast slope of Little Mountain. Included are minor areas of Rock outcrop on the ridgetops, and Jenkinson soils and soils similar to Cheadle except depth to bedrock is more than 20 inches, in the swales and snowfall areas, together totaling about 15 percent of the complex.

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for rangeland and wildlife habitat.

Cheadle soils: Shallow Loamy, 15 to 19 inch precipitation zone, range site.

Starley, very shallow variant, soils: Very Shallow, 15 to 19 inch precipitation zone, range site.

CRAGOSIN SERIES

The Cragosin series are well drained, shallow soils formed in gravelly alluvium on moderately steep and steep ridges and sideslopes. Slopes are 10 to 60 percent. Elevation is 7,000 to 7,800 feet. Vegetation is big sagebrush (stunted growth), rabbitbrush, needleleaf sedge, bluebunch wheatgrass, and juniper. Precipitation is 10 to 14 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the profile is brown gravelly loam about 16 inches thick underlain by conglomerate bedrock, sandstone, or shale.

This soil is moderately permeable. Available water capacity is 0.7 to 2.2 inches. Effective rooting depth is 10 to 20 inches, to the bedrock. There are common fine and medium roots to 10 inches and few fine and medium roots below to bedrock.

Representative profile is located on the northwest slope of Tepee Mountain about the center of Sec. 1, T. 12 N., R. 105 W.

A1	0-2 inches	Yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 4/4) moist: weak coarse crumb: soft, friable, nonsticky, nonplastic: 25 percent gravel; slight effervescence: strongly alkaline (pH 8.6): clear smooth boundary.
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C1	2-16 inches	Brown (7.5YR 5/4) gravelly loam, dark brown (7.5YR 4/4) moist: massive: loose, nonsticky, nonplastic; 30 percent gravel, 15 percent cobble: slight effervescence: strongly alkaline (pH 8.6): gradual wavy boundary.
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IIC2	16 inches	Gravelly and cobbly conglomerate.
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Content of coarse fragments range from 15 to 50 percent in the A horizon and 35 to 60 percent in the C horizon. Depth to paralithic bedrock is 10 to 20 inches. Reaction is mildly or strongly alkaline. Texture is gravelly loam, gravelly sandy loam, or very gravelly sandy loam.

The color of the A horizons have hues of 7.5YR or 10YR, values of 5 or 6 dry and 4 or 5 moist, and chromas of 2 to 4.

The color of the C horizon has hues of 7.5YR or 10YR.

Cragosin-Brownsto-Thermopolis complex (505): This complex consists of about 25 percent Cragosin gravelly loam, 6 to 30 percent slopes, about 25 percent Brownsto gravelly sandy loam, 3 to 25 percent slopes, about 25 percent

Thermopolis sandy loam, 10 to 30 percent slopes, and about 10 percent Rock outcrop. This unit occupies the lower slopes and sour ridges of Tence Mountain and Richards Mountain. Included are minor areas of Almy, Goslin, and Redcreek soils totaling about 15 percent.

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for rangeland and wildlife habitat.

Cragosen and Thermopolis soils: Shallow Loamy, 10 to 14 inch precipitation zone, range site.

Brownsto soils: Sandy, 10 to 14 inch precipitation zone, range site.

FIVEOH SERIES

The Fiveoh Series are well-drained soils formed in alluvium on gently and moderately sloping alluvial fans and terraces. Slopes are 3 to 10 percent. Elevation is 6,400 to 7,500 feet. Vegetation is big sagebrush, shadscale, pricklypear cactus, barrel cactus, Sandberg bluegrass, rubber rabbitbrush and thickspike wheatgrass. Precipitation is 10 to 14 inches.

Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is brown sandy loam about 11 inches thick. The subsoil is light brown and pink, strongly alkaline sandy loam about 19 inches thick. The substratum is brown sandy loam to 60 inches.

This soil is moderately permeable. Available water capacity is 3.6 to 7.2 inches. Typically, the soils have many fine and few medium roots to 11 inches, common fine and few medium roots to 24 inches, and very few roots below.

Representative profile is located in center of SW $\frac{1}{4}$, Sec. 24. T. 13 N., R. 105 W.

All	0-2 inches	Brown (10YR 5/3) sandy loam, dark brown (10YR 4/6) moist; crusty parting to weak fine subangular blocky; soft, very friable, slightly sticky, slightly plastic; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
AC	2-11 inches	Brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 4/4) moist; weak medium subangular blocky; soft, very friable, slightly sticky, slightly plastic; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
Clca	11-23 inches	Pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky, slightly plastic; violent effervescence; strongly alkaline (pH 9.0); considerable marl-like lime; gradual wavy boundary.

C2ca	23-30 inches	Light brown (7.5YR 6/4) sandy loam, dark brown (7.5YR 4/4) moist; massive, hard, friable, slightly sticky, slightly plastic; strong effervescence; strongly alkaline (pH 8.6); considerable marl-like lime; clear wavy boundary.
C3	30-60 inches	Reddish brown (5YR 5/3) sandy loam, reddish brown (5YR 4/3) moist; soft, very friable, slightly sticky, slightly plastic; strong effervescence; moderately alkaline (pH 8.5).

The content of coarse fragments throughout the profile ranges from 0 to 15 percent. Textures are sandy loam or loam.

The color of the A1 horizons have hues of 5YR or 7.5YR, values of 5 to 7 dry and 4 or 5 moist, and chromas of 3 or 4. Reaction ranges from pH 7.9 to 8.6; conductivity ranges from 1 to 4 millimhos.

The color of the C horizons have hues of 5YR or 7.5YR, values of 5 to 7 dry and 4 or 5 moist and chromas of 3 or 4. Reaction ranges from pH 8.5 to 9.0; conductivity ranges from 4 to 16 millimhos.

Fiveoh association (523): This association consists of about 60 percent Fiveoh sandy loam, 3 to 10 percent slopes, and about 25 percent Thermopolis sandy loam, 6 to 30 percent slopes. These soils occupy the alluvial fans on both sides of Red Creek. Fiveoh occurs on the relatively smooth alluvial fans. Thermopolis occurs in the breaks or ravines that dissect the alluvial fans. Included are minor areas of Goslin, Brownsto, Redcreek, and Redwash soils, and Rock outcrop totaling 15 percent of the association.

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for rangeland and wildlife habitat.

Fiveoh soils: Loamy, 10 to 14 inch precipitation zone, range site.

Thermopolis soils: Shallow Loamy, 10 to 14 inch precipitation zone, range site.

GOSLIN SERIES

The Goslin series are well drained soils formed in alluvium on gently sloping to moderately steep alluvial fans and terraces. Slopes are 3 to 20 percent. Elevation is 6,300 to 7,500 feet. Vegetation is big sagebrush, rubber rabbitbrush, Indian ricegrass, and thickspike wheatgrass. Precipitation is 10 to 14 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the profile is brown and reddish brown fine sandy loam to 60 inches.

This soil has moderately rapid permeability. Available water capacity is 7.2 to 9.6 inches. Effective rooting depth is 60 inches or more. Typically, there are common fine, medium, and coarse roots to 16 inches and few fine, medium, and coarse roots to 60 inches.

Representative profile is located in the spillway gully along Daniels Creek in the NE¹/₄ of NW¹/₄, Sec. 8, T. 12 N., R. 105 W.

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| All | 0-2 inches | Brown (10YR 5/4) fine sandy loam, dark brown (7.5YR 4/4) moist, weak coarse platy; soft, very friable, slightly sticky, slightly plastic; slight effervescence; moderately alkaline (pH 8.2); abrupt wavy boundary. |
| AC | 2-20 inches | Brown (7.5YR 5/4) fine sandy loam, dark brown (5.5YR 4/4) moist; weak coarse subangular blocky; slightly hard, very friable, slightly sticky, slightly plastic; strong effervescence, moderately alkaline (pH 8.3); gradual wavy boundary. |
| C1 | 20-50 inches | Reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/4) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; strong effervescence; strongly alkaline (pH 8.6); clear wavy boundary. |

Content of coarse fragments ranges from 0 to 15 percent.

The color of the A horizons have hues of 5YR or 7.5YR, values of 5 or 6 dry and 4 or 5 moist, and chromas of 3 or 4. Reaction ranges from pH 7.9 to 9.0.

Goslin complex, 3 to 10 percent slopes (502): This complex consists of about 80 percent Goslin fine sandy loam, 3 to 10 percent slopes. Included are about 5 percent Thermopolis sandy loam, about 5 percent Redcreek sandy loam, and about 5 percent Tisworth sandy loam, and about 5 percent Rock outcrop. These soils occur in a complex pattern without any definable relationship to topography, along the streams and draws leading to Red Creek, mostly the alluvial fans to the west and north of Red Creek.

Runoff is medium to rapid and the erosion hazard is moderate to severe; deep gullies are common.

This complex is used for irrigated hay meadows, range, and wildlife habitat.

Loamy, 10 to 14 inch precipitation zone, range site.

JENKINSON SERIES

The Jenkinson soils are well drained, shallow soils formed in residuum from sandstone and shale on gently sloping to moderately steep uplands. Slopes are 3 to 15 percent. Elevation is 7,700 to 8,500 feet. Vegetation is big sagebrush, phlox, rabbitbrush, and Sandberg bluegrass. Precipitation is 13 to 16 inches. Mean annual soil temperature is about 42°F., and the frost-free season is 60 to 90 days.

Typically, the profile is grayish brown and brown loam about 14 inches thick, underlain by sandstone.

This soil is moderately permeable. Available water capacity is 1.4 to 3.4 inches. Effective rooting depth is 10 to 20 inches, to the bedrock. There are many fine and few medium roots to 8 inches and common fine and few medium roots to bedrock.

Representative profile is located in the SW $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec. 12, T. 13 N., R. 105 W.

A11	0-2 inches	Grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular; soft, friable, sticky, plastic; slight effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
A12	2-7 inches	Brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky; slightly hard, friable, sticky, plastic; slight effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
C	7-14 inches	Brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; weak fine and very fine subangular blocky; slightly hard, friable, sticky, plastic; strong effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
R	14 inches	Hard sandstone.

Depth to bedrock ranges from 10 to 20 inches. Content of coarse fragments is typically 5 percent fine channery but ranges from 5 to 20 percent and some pedons contain a few flagstones.

Jenkinson—Roxal association (715): This association consists of about 30 percent Jenkinson loam, 3 to 10 percent slope, about 20 percent Roxal loam, 3 to 20 percent slopes and about 20 percent Leavitt loam, 3 to 10 slopes. These soils occur on the rolling uplands above the north rim, the southeast divide of the watershed, and on the southwest slope of Pine Mountain. The shallow Jenkinson and Roxal soils occupy the ridges and upper parts of slopes, the Roxal soils the most exposed to sun and wind portions of the slopes. The Leavitt soils occur on the lower parts of slopes in the draws or swales. Included is about 10 percent of Rock outcrop on the ridges, about 15 percent of a soil similar to Leavitt, except bedrock occurs at depths of 20 to 60 inches, on the sideslopes, and about 5 percent of a soil similar to Leavitt, except the dark surface layer is more than 16 inches deep, in the bottom of the swales.

Runoff is slow to rapid and the erosion hazard is slight to severe.

These soils are used for rangeland and wildlife habitat.

Jenkinson and Roxal soils: Shallow loamy, 15 to 19 inch precipitation zone, range site.

Leavitt soils: Loamy, 15 to 19 inch precipitation zone, range site.

LEAVITT SERIES

The Leavitt series are well drained soils formed in alluvium on gently sloping and sloping alluvial fans and sideslopes. Slopes are 3 to 10 percent. Elevation is 7,700 to 8,500 feet. Vegetation is big sagebrush, lanceleaf rabbitbrush, phlox, and Sandberg bluegrass. Precipitation is 13 to 16 inches. Mean annual soil temperature is about 42°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is grayish brown loam about 6 inches thick. The subsoil is brown clay loam about 32 inches thick. The substratum is grayish brown clay loam to 60 inches.

This soil is moderately permeable. Available water capacity is 10 to 12 inches. Effective rooting depth is 60 inches or more. There are many fine and common medium roots to 8 inches, common fine and medium roots to 24 inches, and few fine and medium roots to 40 inches.

Representative profile is located 60 feet northwest of dirt road in SW $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec. 12, T. 13N., R. 105 W.

A11	0-2 inches	Grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; moderate fine granular; soft, friable, sticky, plastic; mildly alkaline (pH 7.3); clear wavy boundary.
A12	2-6 inches	Grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky; soft, friable, sticky, plastic; mildly alkaline (pH 7.3); clear wavy boundary.
B2t	6-22 inches	Brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; weak medium prismatic parting to moderate fine and very fine subangular blocky; continuous moderately thick clay films; slightly hard, friable, sticky, plastic; common fine tubular pores slight effervescence; mildly alkaline (pH 7.3); gradual wavy boundary.
B3ca	22-38 inches	Brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; weak fine and very fine subangular blocky; slightly hard, friable, sticky, plastic; common fine tubular pores: strong effervescence; moderately alkaline (pH 8.2) clear wavy boundary.
C	38-50 inches	Grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, friable, sticky, plastic; strong effervescence; moderately alkaline (pH 8.2).

Content of coarse fragments ranges from 0 to 15 percent.

The A horizons have color hues of 10YR or 2.5Y and textures of loam or silt loam. Texture of the B2t horizon is clay loam or silty clay loam.

The color of the C horizon has hues of 10YR or 2.5Y.

The Leavitt soils are mapped together with Jenkinson and Roxal soils.

LIBEG SERIES

The Libeg series are well drained soils formed in glacial till or alluvium from glacial till on steep sideslopes. Slopes are 20 to 30 percent, mostly north facing. Elevation is 7,500 to 8,800 feet. Vegetation is big sagebrush, black sagebrush, lanceleaf rabbitbrush, snowberry, prairie junegrass, thickspike wheatgrass, Kentucky bluegrass, basin wildrye, and few small clumps of aspen. Precipitation is 14 to 18 inches. Mean annual soil temperature is about 42°, and the frost-free season is 50 to 70 days.

Typically, the surface layer is reddish brown loam about 12 inches thick. The subsoil is reddish brown cobbly loam to 60 inches.

This soil has moderately slow permeability. Available water capacity is 6.0 to 3.4 inches. Effective rooting depth is 60 inches or more. There are many fine and few medium and coarse roots to 12 inches, common fine and few medium and coarse roots to 24 inches and few fine and medium roots to 50 inches.

Representative profile is located 30 feet north of state line and 20 feet west of ravine in the SW $\frac{1}{4}$, Sec. 20, T. 12 N., R 103 W.

A11	0-2 inches	Dark reddish gray (5YR 4/2) loam, dark reddish brown (5YR 3/2) moist: moderate very fine granular; soft, very friable, slightly sticky, slightly plastic: 10 percent gravel and cobble: neutral (pH 7.2): clear wavy boundary.
A12	2-12 inches	Reddish brown (5YR 4/3) loam, dark reddish brown (5YR 3/2) moist: moderate medium subangular blocky; slightly hard, friable, sticky, plastic; 10 percent gravel and cobble; neutral (pH 7.2); clear wavy boundary.
B22t	12-32 inches	Reddish brown (5YR 5/4) cobbly clay loam, reddish brown (5YR 4/2) moist; strong medium and fine subangular blocky; hard, firm, sticky, plastic; 20 percent gravel, 15 percent cobble, 10 percent stone; few fine tubular pores; neutral (pH 7.2); gradual wavy boundary.
B3	32-50 inches	Reddish brown (5YR 5/4) cobbly loam, reddish brown (5YR 4/2) moist; moderate medium subangular blocky; hard, firm, sticky, plastic. 10 percent gravel, 15 percent cobble, few fine tubular pores; neutral (pH 7.2).

Rock fragments in the A horizons range from 5 to 50 percent, and in the B horizons from 35 to 70 percent. In some pedons stones occur on the surface and throughout the profile. Depth to effervescence is over 50 inches.

The color of the A horizons have hues of 5YR to 10 YR, values of 4 or 5 dry and 2 or 3 moist, and chromas of 2 or 3.

The color of the B horizons have hues of 5YR or 7.5YR, values of 4 or 5 moist, and chromas of 3 or 4.

Libeg-Amsden, gravelly variant-Teeman complex (707): This complex consists of about 20 percent Libeg loam, 15 to 30 percent slopes, about 20 percent Libeg stony loam, 15 to 30 percent slopes, about 30 percent Amsden, gravelly variant, gravelly loam, 20 to 50 percent slopes. Libeg stony loam differs from Libeg loam as described in that on the surface and throughout the profile there is a higher coarse fragment content composed of about 15 percent stones, 25 percent cobble, and 10 percent gravel. This complex occupies the generally north facing slopes south of Little Red Creek in the southeastern part of the watershed.

Runoff is rapid and the erosion hazard is severe.

This complex is used for rangeland and wildlife habitat.

Libeg loam, Amsden, and Teeman soils: Loamy, 15 to 19 inch precipitation zone, range site.

Libeg stony loam: Coarse Upland, 15 to 19 inch precipitation zone, range site.

McCORT SERIES

The McCort series are well-drained soils formed in gravelly alluvium on gently sloping to very steep alluvial fans and mountain slopes. Slopes are 2 to 55 percent. Elevation is 9,100 to 9,600 feet. Vegetation is big sagebrush, letterman needlegrass, foxtail barley, Idaho fescue, spike fescue and black sagebrush. Precipitation is 25 to 20 inches. Mean annual soil temperature is about 42°F., and the frost-free season is 60 to 70 days.

Typically, the surface layer is dark brown, gravelly sandy loam about 12 inches thick. The subsoil is reddish brown, gravelly sandy loam about 9 inches thick. The substratum is light reddish brown, very gravelly sandy loam to 60 inches.

This soil has moderately rapid permeability. Available water capacity is 3.2 to 5 inches. Effective rooting depth is 60 inches or more. Typically, these soils have many fine and few medium and coarse roots to 9 inches, common fine and few medium and coarse roots to 22 inches, and very few fine roots below.

Representative profile is located on top of Pine Mountain along the east side of trail 500 feet south of center of Sec. 9, T. 12 N., R. 103 W.

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| A11 | 0-6 inches | Brown (7.5YR 2/2) gravelly sandy loam, very dark brown (7.5YR 2/2) moist: weak fine granular: soft, very friable, slightly sticky, slightly plastic; 15 percent gravel: neutral, (pH 7.0): clear wavy boundary. |
| A12 | 6-12 inches | Brown (7.5YR 4/2) gravelly sandy loam, dark brown (7.5YR 3/2) moist: weak coarse to fine subangular blocky: soft, very friable, slightly sticky, slightly plastic; 15 percent gravel; neutral (pH 7.2); clear wavy boundary. |

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| B2 | 12-21 inches | Reddish brown (5YR 5/3) gravelly sandy loam, reddish brown (5YR 4/3) moist; weak coarse to fine subangular blocky; soft, very friable, slightly sticky, slightly plastic; 20 percent gravel; neutral (pH 7.2); clear wavy boundary. |
| C1 | 21-31 inches | Light reddish brown (5YR 6/3) very gravelly sandy loam, reddish brown (5YR 4/3) moist; massive; slightly hard, friable, slightly sticky; nonplastic; 55 percent gravel; neutral, (pH 7.2) gradual wavy boundary. |
| C2 | 31-60 inches | Reddish brown (5YR 5/3) cobbly sandy loam, reddish brown (5YR 4/3) moist; massive; loose, very friable, slightly sticky, nonplastic; 10 percent stones, 15 percent cobbles, and 40 percent gravel; neutral (pH 7.2). |

Content of rock fragments ranges from 10 to 50 percent in the A and B horizons and from 50 to 80 percent in the C horizons. In some soils the B horizon is absent.

The color of the A1 horizons have values of 3 or 4 dry and 2 or 3 moist and chromas of 2 or 3.

The color of the C horizons have hues ranging from 2.5YR to 7.5YR, values of 4 or 5 dry and 3 to 5 moist, and chromas of 3 or 4. Reaction ranges from pH 6.6 to 7.3.

McCort gravelly sandy loam (701) - This unit consists of about 75 percent McCort gravelly sandy loam, 3 to 10 percent slope, about 15 percent McCort stony sandy loam, 40 to 60 percent slopes. These soils occur on the top of Pine Mountain and the upper sideslopes. The profile of McCort stony sandy loam differs from that described for the series in that it has 35 to 80 percent stones, cobble, and gravel on the surface and throughout the profile; this soil occurs on the steep slope just below the rim of the mountain top. Included is about 10 percent of soil similar to McCort stony sandy loam except that the combined thickness of the A1 horizons is 20 to 36 inches; this soil occurs just below the rim of the mountain top.

Runoff on McCort gravelly sandy loam, 3 to 10 percent slope, is medium and the erosion hazard is moderate. Loamy, 15 to 19 inch precipitation zone, range site.

Runoff on McCort stony sandy loam, 40 to 60 percent slope, and the inclusion, is rapid and the erosion hazard is severe. Steep Stony, 15 to 19 inch precipitation zone, range site.

These soils are used for rangeland and wildlife habitat.

PISHKUN SERIES

The Pishkun series are well drained soils formed in colluvium from shale on moderately steep and steep mountain sides. Slopes are 15 to 50 percent.

Elevation is 7,500 to 8,500 feet. Vegetation is big sagebrush, snowberry, rubber rabbitbrush, thickspike wheatgrass and a few scattered greasewood. Precipitation is 13 to 16 inches. Mean annual soil temperature is about 42°F. and the frost-free season is 50 to 70 days.

Typically, the surface layer is brown channery clay loam about 24 inches thick. The subsoil and substratum are yellowish brown channery clay loam with strata of channery sandy loam to 60 inches.

This soil is moderately permeable. Available water capacity is 3.5 to 8.0 inches. Effective rooting depth is 60 inches or more. There are common fine and few medium roots to 24 inches, few fine and medium roots to 40 inches and very few roots below.

Representative profile is located on the west slope of Pine Mountain in the SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 8, T. 12 N., R. 103 W.

A11	0-5 inches	Yellowish brown (10YR 5/4) channery clay loam, brown (10YR 4/4) moist; moderate medium granular; soft, friable, sticky, plastic; 30 percent fine channery; strong effervescence: strongly alkaline (pH 8.0): gradual wavy boundary.
A12	5-24 inches	Yellowish brown (10YR 5/4) channery clay loam, brown (10YR 4/4) moist; weak coarse and medium subangular blocky, soft, friable, sticky, plastic; 30 percent channery: strong effervescence: strongly alkaline (pH 8.2): clear wavy boundary.
C1	24-40 inches	Yellowish brown (10YR 5/3) channery clay loam, brown (10YR 4/4) moist: massive: soft, friable, sticky, plastic: 50 percent fine channery: strong effervescence: strongly alkaline (pH 8.2): gradual wavy boundary.
C2	40-60 inches	Light yellowish brown (10YR 6/4) channery sandy loam, dark yellowish brown (10YR 4/4) moist; massive: soft, very friable, slightly sticky, plastic: 40 percent channery: strong effervescence: strongly alkaline (pH 8.2).

Content of channery ranges from 25 to 75 percent throughout profile, but the control section will have more than 35 percent. Texture of the less than 2mm fraction is clay loam, silty clay loam, loam, or sandy loam. The color of the profile has hues of 10YR or 2.5Y with a few pedons that have a minor layer of 7.5YR.

Pishkun complex (705): This complex consists of about 75 percent Pishkun channery clay loam, 15 to 50 percent slopes. These soils occupy the slopes below the shale and sandstone cliffs of Little Mountain and Pine Mountain and below part of the north rim. Included are soils similar to Pishkun except they have deep dark grayish brown surface layers; these soils occur in the ravine bottoms and snowfall areas where the aspen groves and service-berry grow.

Also included are minor areas of soils similar to Pishkun except they are 20 to 60 inches deep to shale, and soils similar to Pishkun except they have a higher clay content and are strongly saline and very strongly alkaline. These inclusions total 15 percent of the complex.

Runoff is rapid and the erosion hazard is severe. The soils in this complex are unstable and landslides are common.

These soils are used for rangeland and wildlife habitat.

Loamy, 15 to 19 inch precipitation zone, range site.

Pishkun - Rock outcrop association (710): This association consists of about 40 percent Pishkun channery clay loam, 30 to 50 percent slopes, about 30 percent Rock outcrop, about 10 percent Starley, very shallow variant, very channery loam, 40 to 65 percent slopes. This association occupies the prominent grayish shale and sandstone escarpments and associated steep soils on the sides of Little Mountain and Pine Mountain and along part of the north rim. The Rock outcrop is mainly the steep to vertical escarpments. Pishkun soils occur on the colluvial toe slopes below the Rock outcrop. Cheadle, and Starley, very shallow variant soils occur intermittently on the steep slopes. Included is about 10 percent of soils similar to Pishkun except the substratum has shale bedrock at 20 to 60 inch depth.

Runoff is very rapid and the erosion hazard is very severe. Pishkun soils are unstable and landslides are common.

These soils are used for rangeland and wildlife habitat.

Pishkun soils: Loamy 15 to 19 inch precipitation zone, range site.

Rock outcrop: No range site assigned.

Cheadle soils: Shallow Loamy, 15 to 19 inch precipitation zone, range site.

Starley, very shallow variant soils: Very Shallow, 15 to 19 inch precipitation zone, range site.

PISHKUN, COARSE VARIANT

The Pishkun, coarse variant soils are well drained soils formed in gravelly alluvium on steep alluvial fans and mountain slopes. Slopes are 20 to 40 percent, mostly north facing and exposed to the wind in such a position that very little snow accumulates. Elevation is 7,200 to 8,400 feet. Vegetation is bluebunch wheatgrass, prairie junegrass and nailwort. Precipitation is 10 to 14 inches. Mean annual soil temperature is about 42°, and the frost-free season is 50 to 70 days.

Typically, the surface layer is brown gravelly sandy loam about 5 inches thick. The subsoil is white or very pale brown, limey, very gravelly sandy loam. The substratum is light yellowish brown very gravelly loam to 40 inches or more.

This soil has moderately rapid permeability. Available water capacity is 2.4 to 4.8 inches. Effective rooting depth is 40 inches or more. Typically, this soil has many fine roots to 5 inches, and common fine roots to 15 inches with very few roots below.

Representative profile is located on the north slope of Richards Mountain in the NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 8, T. 12 N., R. 105 W.

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| A1 | 0-5 inches | Brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine granular; soft, very friable, slightly sticky, nonplastic; 50 percent gravel; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary. |
| Clca | 5-32 inches | Very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak medium to very fine; subangular blocky; slightly hard, friable, non-sticky; non plastic; 75 percent gravel and cobble; violent effervescence; moderately alkaline (pH 8.4); lime occurs in pockets in a marl-like form, and as hard crusts on the underside of gravel and cobble; gradual wavy boundary. |
| C2 | 32-45 inches | Light yellowish brown (10YR 6/4) very gravelly sandy loam yellowish brown (10YR 5/6) moist; massive; soft very friable, slightly sticky, nonplastic; 60 percent gravel and cobble; strong effervescence; moderately alkaline (pH 8.4). |

Content of rock fragments range from 35 to 75 percent. Parent material is a conglomerate, pieces of which occur in the lower part of the profile. Depth to bedrock is over 40 inches.

The color of the A1 horizon has values of 5 or 6 dry and 3 or 4 moist, and chromas of 2 or 3. Where the A1 is dark enough for mollic it is too thin.

The color of the C horizon has values of 5 or 6 dry and 3 or 4 moist, and chromas of 2 to 6.

Pishkun, coarse variant - Teeman, brown phase association (708): This association consists of about 50 percent Pishkun, coarse variant, gravelly sandy loam, 20 to 40 percent slope, and about 30 percent Teeman, brown phase, gravelly sandy loam, 30 to 50 percent slopes. The profile of the Teeman, brown phase is similar to that described for the series except the color hue is 10YR. This association occupies the north slopes of Richards Mountain. The Pishkun, coarse variant, soils occur on the smooth slopes exposed to the wind. Vegetation on these soils is mainly grass with very few shrubs. The Teeman, brown phase, soils occur in the ravines and snowfall areas that are slightly sheltered and have a better moisture situation. Included are minor areas of conglomerate bedrock outcrops, and shallow and very shallow, very gravelly sandy loam soils totaling about 10 percent; these soils occur on the ridges. Also included is about 10 percent of deep, dark colored sandy loam soils which occur in the ravines and snowfall areas.

Runoff is rapid and the erosion hazard is severe.

These soils are used for rangeland and wildlife habitat.

Loamy, 10 to 14 inch precipitation zone, range site.

RAVALLI SERIES

The Ravalli series are well drained, strongly saline and alkaline soils formed in alluvium on gently sloping alluvial fans. The slopes are 1 to 6 percent. Elevation is 6,300 to 7,300 feet. Vegetation is greasewood, Gardener saltbush, greenmolly, pricklypear cactus, shadscale, and bottlebrush squirreltail. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is pale brown fine sandy loam about 3 inches thick. The subsoil is brown clay loam about 8 inches thick. The substratum is light yellowish brown fine sandy loam to 60 inches.

This soil is moderately permeable. Available water capacity is 3.0 to 6.0 inches. Effective rooting depth is 60 inches or more. Typically, there are many fine and common roots to 12 inches, few fine and medium roots to 24 inches, and very few fine and medium roots to 60 inches.

Representative profile is located on an alluvial fan on the east side of Red Creek in SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Sec. 11, T. 12 N., R. 105 W.

A1	0-3 inches	Pale brown (10YR 6/3) fine sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy; soft, very friable, slightly sticky, slightly plastic; strong effervescence, strongly alkaline (pH 9.0); abrupt wavy boundary.
B2t	3-11 inches	Brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate coarse columnar with moderately thick continuous clay films, parting to moderate very fine subangular blocky with patchy thin clay films; hard, friable, very sticky, very plastic; common fine tubular pores; slight effervescence; very strongly alkaline (pH 9.4); clear wavy boundary.
B3	11-21 inches	Light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium prismatic; slightly hard, very friable, slightly sticky, plastic; few fine tubular pores; strong effervescence; strongly alkaline (pH 8.7); gradual wavy boundary.
C	21-60 inches	Light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; strong effervescence; moderately alkaline (pH 8.4).

Content of coarse fragments ranges from 0 to 15 percent throughout the profile. Texture of the B2t horizon is a clay loam or sandy clay loam.

The Ravalli soils are mapped in complex with the Tisworth, fine variant, soils.

REDCREEK SERIES

The Redcreek series are well drained, shallow soils formed in residuum from sandstone on gently sloping to steep uplands. Slopes are 2 to 30 percent. Elevation is 6,300 to 6,800 feet. Vegetation is big sagebrush, shadscale, pricklypear cactus, barrel cactus, Sandberg bluegrass, and needle-and-thread grass. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 46°F., and the frost-free season is 60 to 90 days.

Typically, the profile is a light reddish brown, fine sandy loam about 10 inches thick underlain by light reddish brown, channery sandy loam about 5 inches thick, underlain by hard sandstone.

This soil is moderately rapid permeable. Available water capacity is 1.6 to 2.2 inches. Effective rooting depth is to bedrock. Typically, the soil has common fine roots throughout the profile.

Representative profile is located about 1 miles northwest of Red Creek Ranch in SE¹₄ of NE¹₄, Sec. 28, T. 13 N., R. 104 W.

All	0-4 inches	Light reddish brown (7.5YR 6/4) fine sandy loam, dark brown (7.5YR 4/2) moist; weak coarse platy; soft, very friable, slightly sticky, plastic; strong effervescence; moderately alkaline, (pH 8.2); clear wavy boundary.
AC	4-10 inches	Light reddish brown (5YR 6/3) fine sandy loam, reddish brown (5YR 4/4) moist; weak medium subangular blocky, soft, very friable, slightly sticky, plastic strong effervescence; moderately alkaline (pH 8.2) clear wavy boundary.
C	10-15 inches	Light reddish brown (5YR 6/3) fine sandy loam, reddish brown (5YR 4/4) moist; massive; strong effervescence; moderately alkaline (pH 8.2); clear wavy boundary.
R	15-30 inches	Hard sandstone.

Depth to bedrock ranges from 10 to 20 inches. Content of sandstone channery is normally less than 15 percent but ranges from 0 to 35 percent. The color of the profile has hues of 5YR to 10YR.

The Redcreek soils are mapped with Redwash and Thermopolis soils, and Rock outcrop.

Redcreek-Thermopolis complex (509): This complex consists of about 30 percent Redcreek fine sandy loam, 2 to 30 percent slopes, about 30 percent Thermopolis sandy loam, 3 to 30 percent slopes, about 20 percent Redwash sandy loam, 6 to 30 percent slopes, and about 15 percent Rock outcrop. Included are minor areas of Goslin and Tisworth soils totaling about 5 percent. This unit is extensive, most of it occurring west and north of Red Creek.

Runoff is rapid and the erosion hazard is severe. These soils have been severely gullied and are some of the main sediment producers to Red Creek.

This complex is used for rangeland and wildlife habitat.

Redcreek and Thermopolis soils: Shallow Loamy, 10 to 14 inch precipitation zone, range site.

Redwash soils: Very Shallow, 10 to 14 inch precipitation zone, range site.

Rock outcrop: No range site assigned.

REDWASH SERIES

The Redwash series are well drained, very shallow soils formed in residuum from sandstone on sloping to steep ridges and sideslopes. Slopes are 6 to 40 percent. Elevation is 6,300 to 7,800 feet. These soils are almost bare of vegetation except for junipers, a few spears of Indian ricegrass, lanceleaf rabbitbush, and pricklypear cactus. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 46°F., and the frost-free season is 60 to 90 days.

Typically, the profile is reddish brown sandy loam about 6 inches thick. underlain by hard sandstone.

This soil is moderately rapid permeable. Available water capacity is .3 to 1.4 inches. Effective rooting depth is to the bedrock. Typically, these soils have common fine roots throughout the profile.

Representative profile is located in NW $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 28, T. 13 N., R. 104W.

A1	0-3 inches	Light brown (7.5YR 6/4) sandy loam, dark brown (7.5YR 4/2) moist; weak fine granular; soft, very friable, slightly sticky, slightly plastic, 10 percent fine channery; strong effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
C	3-6 inches	Reddish brown (5YR 5/3) sandy loam, reddish brown (5YR 4/3) moist; weak medium to very fine subangular blocky; soft, very friable, slightly sticky, plastic, 10 percent fine channery; strong effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
R	6-10 inches	Hard sandstone.

Depth to bedrock ranges from 3 to 10 inches. Content of coarse fragments ranges from 0 to 35 percent. The color of the profile has hues ranging from 5YR to 10YR. Reaction ranges from pH 7.0 to 8.4.

The Redwash soils are mapped with Redcreek and Thermopolis soils, and Rock outcrop.

Rock outcrop (R3): This mapping unit consists of about 60 percent almost vertical sandstone cliffs, of the Mesaverde geological group, and about 30 percent bare shale with 10 to 40 percent slopes at the base of the sandstone cliffs. This unit occurs along the state line on both sides of Richards Gap.

Included is about 10 percent of shallow and moderately deep soils at the base of the cliffs and in small ravines. Elevation ranges from 6,300 to 7,300 feet. The cliffs and shale slopes are south facing. Vegetation is restricted to a few scattered juniper on the sandstone cliffs and a little scattered Gardener saltbush on the shale slopes. This unit has only very little wildlife habitat value, but does have a high scenic value.

No range site assigned.

Rock outcrop-Redwash complex (R4): This unit consists of about 65 percent bare sandstone and shale outcrops of the Wasatch geological formation, mostly reddish color, with slopes of 30 percent to vertical; about 20 percent Redwash sandy loam, 15 to 40 percent slopes; and about 10 percent Thermopolis sandy loam, 10 to 30 percent slopes. This is part of the badlands area occurring mainly just below the north rim of the watershed. Included are minor areas totaling about 5 percent of Goslin, Fiveoh, Tisworth, and Redcreek soils.

Runoff is very rapid and the erosion hazard very severe. This unit is one of the main sediment producers to Red Creek.

These soils are used for rangeland and wildlife habitat. They also have considerable scenic value.

Rock outcrop: No range site assigned.

Redwash soils: Very Shallow, 10 to 14 inch precipitation zone, range site.

Thermopolis soils: Shallow Loamy, 10 to 14 inch precipitation zone, range site.

Rock outcrop-Southace association (R6): This association consists of about 40 percent Rock outcrop, a conglomerate of the Wasatch geological formation, on slopes ranging from 10 percent to vertical cliffs, about 40 percent Southace cobbly sandy loam, 30 to 60 percent slopes, and about 20 percent Cragosen cobbly sandy loam, 30 to 60 percent slopes. This association occupies the south slope of Richards Mountain, a small area on the north slope of Richards Mountain, and a major portion of the south slope of Tepee Mountain. The Rock outcrop is Wasatch conglomerate and occurs mainly on the upper part of the mountain sides. The Southace cobbly sandy loam differs from the description for the series in that the texture of the matrix is sandy loam instead of loam and the rock fragment content has more cobbles and stones; this soil occurs on the colluvial toe slopes below the Rock outcrop. The Cragosen cobbly sandy loam differs from the description for the series in that the texture of the matrix is sandy loam instead of loam and the rock fragment content has more cobbles and stones.

Runoff is rapid and the erosion hazard is moderate to severe.

These soils are used for rangeland and wildlife habitat; this unit also has considerable scenic value.

Rock outcrop: No range site assigned.

Southace soils: Steep Loamy, 10 to 14 inch precipitation zone, range site

Cragosen soils: Shallow Loamy, 10 to 14 inch precipitation zone, range site.

ROXAL SERIES

The Roxal series are well drained, shallow soils formed in residuum from shale on gently sloping to moderately steep upland spur ridges and mountain slopes.

Slopes are 3 to 20 percent. Elevation is 7,700 to 8,500 feet. Vegetation is big sagebrush, lanceleaf rabbitbrush, and prairie junegrass. Precipitation is 13 to 15 inches. Mean annual soil temperature is about 44°F., and the frost-free season is 60 to 90 days.

Typically, the profile is light yellowish brown and pale yellow, loam about 15 inches thick, underlain by soft shale.

This soil is moderately permeable. Available water capacity is 1.4 to 3.4 inches. Effective rooting depth is 10 to 20 inches, to the bedrock. The profile has common fine and medium roots throughout.

Representative profile is located 200 feet north of the state line in the SE¹. Sec. 22, T. 12 N., R. 103 W.

A1	0-4 inches	Light yellowish brown (2.5Y 6/4) loam, brown (10YR 4/4) moist; moderate fine granular; soft, friable, sticky, plastic; strong effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
C1	4-15 inches	Pale yellow (2.5Y 7/4) loam, light olive brown (2.5Y 5/4) moist; weak medium subangular blocky; soft, friable, sticky, plastic; strong effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
Cs	15 inches	Soft shale.

Depth to bedrock is 10 to 20 inches. Content of coarse fragments is 0 to 25 percent. Reaction is mildly or moderately alkaline. Texture is loam or clay loam.

The color of the A horizon has hues of 10YR or 2.5Y, values of 6 or 7 dry and 4 or 5 moist, and chromas of 2 to 4.

The color of the C horizon has hues of 10YR or 2.5Y, values of 6 or 7 dry and 4 or 5 moist, and chromas of 3 or 4.

These soils are mapped with Jenkinson and Leavitt soils, and Rock outcrop.

SCOUT SERIES

The Scout series are well drained soils formed in gravelly alluvium on gently sloping to steep mountain slopes. Slopes are 3 to 30 percent. Elevation is 8,500 to 9,500 feet. Vegetation is predominantly subalpine fir and lodgepole pine, with some aspen, ground juniper and understory of forbs. Precipitation is 15 to 19 inches. Mean annual soil temperature is about 40°F., and the frost-free season is 50 to 70 days.

Typically, the surface has a one inch organic mat underlain by black cobbly sandy loam about 1 inch thick. The subsurface layer is pinkish gray cobbly sandy loam about 12 inches thick. The subsoil and substratum are light reddish brown stony sandy loam to 60 inches.

Available water capacity is 2.4 to 4.2 inches. Effective rooting depth is 60 inches or more. This soil has few fine, medium, and coarse roots to 60 inches. Permeability is moderately rapid.

Representative profile is located on the north slope of Pine Mountain along trail in NW $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec. 3, T. 12 N., R. 103 W.

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| O | 1-0 inch | Leaves, needles and partially decomposed organic matter. |
| A1 | 0-1 inch | Very dark grayish brown (10YR 3/2) cobbly sandy loam, black (10YR 2/1) moist: moderate fine granular; soft, very friable, slightly sticky, slightly plastic: 30 percent gravel, 20 percent cobble; slightly acid (pH 6.4); abrupt wavy boundary. |
| A2 | 1-13 inches | Pinkish gray (7.5YR 6/2) cobbly sandy loam, brown (7.5YR 4/2) moist; loose, very slightly sticky, non-plastic; 30 percent gravel, 20 percent cobble; slightly acid (pH 6.4); clear wavy boundary. |
| B21 | 13-30 inches | Light reddish brown (5YR 6/3) cobbly sandy loam, reddish brown (5YR 4/3) moist; loose, very slightly sticky non-plastic; 30 percent gravel, 20 percent cobble, and 10 percent stones; slightly acid (pH 6.4). |
| B22 | 30-60 inches | Light reddish brown (2.5YR 6/4) cobbly sandy loam, reddish brown (2.5YR 4/4) moist; loose, slightly sticky slightly plastic; 30 percent gravel, 20 percent cobble, and 10 percent stones: slightly acid (pH 6.4). |

Rock fragments are rounded gravel, cobble, and stone size quartzite and sandstone, ranging from 15 to 75 percent in the A horizons and from 35 to 75 percent in the B horizons.

Scout-Uinta association (702): This association consists of about 60 percent Scout cobbly sandy loam, 6 to 30 percent slopes, and about 35 percent Uinta sandy loam, 10 to 30 percent slopes. These soils occupy part of the top of Pine Mountain and most of the northern slopes. The Scout soils occur on the upper part of the mountain and the Uinta soils occur on the slopes below the Scout soils. Included is about 5 percent McCort soils.

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for grazing and wildlife habitat, very little commercial timber cutting is carried on. Woodland site.

SOUTHACE SERIES

The Southace series are well drained soils formed in gravelly alluvium on steep alluvial fans and mountain slopes. Slopes are 20 to 60 percent, generally south facing. Elevation is 7,600 to 8,500 feet. Vegetation is big sagebrush, black sagebrush, true mountain mahogany, rubber rabbitbrush, bluebunch wheatgrass, Indian ricegrass, and juniper.

Precipitation is 13 to 16 inches. Mean annual soil temperature is about 44°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is brown gravelly loam about 9 inches thick. The subsoils and the substratum are reddish brown cobbly loam to 60 inches.

This soil has moderate or moderately rapid permeability. Available water capacity is 2.4 to 6.6 inches. Effective rooting depth is 60 inches or more. Typically, these soils have many fine, medium and coarse roots to 9 inches, few fine, medium and coarse roots to 16 inches, and very few roots to 40 inches.

Representative profile located on Tepee Mountain 500 feet south of the center of Sec. 17, T. 12 N., R. 104 W.

A1	0-4 inches	Brown (7.5YR 4/4) gravelly loam, dark brown (7.5YR 3/2) moist; moderate medium crumb; soft, very friable, slightly sticky, slightly plastic; 15 percent gravel, 5 percent cobble slight effervescence; moderately alkaline (pH 8.4); clear smooth boundary.
AC	4-9 inches	Reddish brown (5YR 4/4) gravelly loam; dark reddish brown (5YR 3/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; 25 percent gravel, 10 percent cobble; violent effervescence; strongly alkaline (pH 8.6); gradual wavy boundary.
Clca	9-40 inches	Reddish brown (5YR 5/4) gravelly loam, reddish brown (5YR 4/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; 35 percent gravel, 10 percent cobble; violent effervescence; strongly alkaline (pH 8.6); many fine and medium seams of lime; gradual wavy boundary.
C2	40-60 inches	Reddish brown (5YR 5/4) cobbly loam, brown (5YR 4/4) moist; massive; slightly hard, friable; nonsticky, nonplastic; 30 percent gravel, 25 percent cobble; violent effervescence; strongly alkaline (pH 8.6); many fine and medium seams of lime.

The content of rock fragments ranges from 15 to 50 percent in the A horizons and 35 to 85 percent in the C horizons. The texture of the less than 2 mm fraction is loam or sandy loam. The colors throughout the profile have hues of 5YR or 7.5YR. Reaction ranges from pH 8.0 to 8.8 throughout the profile. This soil has weak discontinuous ca horizons.

Southace-Teeman-Teeler complex (709): This complex consists of about 20 percent Southace loam, 30 to 60 percent slopes, about 40 percent Teeman gravelly sandy loam, 20 to 40 percent slopes and about 20 percent Teeler gravelly sandy loam, 10 to 30 percent slopes. These soils occupy some of the steep mountain slopes. Southace soils occur on the south facing slopes. Teeman and Teeler soils occur in an intermingled pattern on east, west and north facing slopes.

Included are minor areas of Amsden, gravelly variant, Libeg, Cheadle, a soil similar to Teeman except it has bedrock at 20 to 40 inches, and Rock outcrop, totaling together about 20 percent of the area.

Runoff is rapid and very rapid, and the erosion hazard is severe and very severe.

These soils are used for rangeland and wildlife habitat.

Southace soils: Steep Loamy, 10 to 14 inch precipitation zone, range site.

Teeman and Teeler soils: Loamy, 15 to 19 inch precipitation zone, range site.

Southace soils are also mapped with Rock outcrop in R6 map unit.

SPOOL SERIES

The Spool series are well drained, very shallow soils formed in residuum from sandstone on steep rocky slopes. Slopes are 15 to 30 percent, mostly north facing. Elevation is 6,300 to 7,500 feet. Vegetation is juniper, a few ponderosa pine, curlleaf mountain mahogany, true mountain mahogany, buckbrush, big sagebrush, black sagebrush, rubber and lanceleaf rabbitbrushes, pricklypear cactus, bluebunch wheatgrass, Indian ricegrass, sedges, and needle-and-threadgrass. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 44°F., and the frost-free season is 60 to 90 days.

Typically the profile is grayish brown, loamy sand about 8 inches thick underlain by hard gray sandstone.

This soil is rapidly permeable. Available water capacity 0.1 to 0.6 inches. Effective rooting depth is 3 to 10 inches, to the bedrock. There are many fine roots to 3 inches, and common fine roots to bedrock.

Representative profile is located to the east of Richards Gap in the NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec., T. 12 N., R. 105 W.

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| A1 | 0-3 inches | Light brownish gray (10YR 6/2) loamy sand, dark grayish brown (10YR 4/2) moist; weak fine granular; soft, very friable, nonsticky, nonplastic; mildly alkaline (pH 7.4); clear wavy boundary. |
| C | 3-8 inches | Brown (10YR 5/3) loamy sand, brown (10YR 4/3) moist; weak medium subangular blocky; soft, very friable, nonsticky, nonplastic; mildly alkaline (pH 7.4); abrupt wavy boundary. |
| R | 8 inches | Hard gray sandstone. |

Depth to bedrock ranges from 3 to 10 inches. Content of coarse fragments is channery or flagstones ranging from 0 to 15 percent. The color of the profile has hues of 10YR or 2.5Y. Textures are loamy sand or sand. Reaction is neutral or mildly alkaline.

Spool-Rock outcrop complex (513): This complex consists of about 40 percent Spool loamy sand, 15 to 35 percent slopes, and about 30 percent Rock outcrop. The Rock outcrop is hard gray sandstone of the Erickson geological formation. These soils occupy the north facing slopes associated with the R3 Rock outcrop map unit running east and west along the state line, the formation through which Red Creek has cut Richards Gap.

Included is about 20 percent of unnamed soil similar to Spool soils except depth to bedrock is 10 to 20 inches. Also included is about 10 percent of unnamed soil which is a deep loamy sand, saline and alkaline, with some pedons having a weak netric horizon, that supports greasewood, shadscale, and spiny horesage; this deep soil occurs at the base of the rocky slope in the ravines.

Runoff is rapid and the erosion hazard is severe.

These soils are used for rangeland and wildlife habitat.

Spool soils: Very Shallow, 10 to 14 inch precipitation zone, range site;
Rock outcrop: no range site designation.

STARLEY, VERY SHALLOW VARIANT

The Starley very shallow variant soils are well-drained, very shallow soils, formed in residuum from sandy shale on gently sloping to moderately steep upland ridges and mountain slopes. Slopes are 3 to 20 percent. Elevation is 7,500 to 8,500 feet. Vegetation is clumps of black sagebrush, nailwort, phlox prairie junegrass, and bluebunch wheatgrass. Precipitation is 13 to 16 inches. Mean annual soil temperature is about 43°F., and the frost-free season is 60 to 90 days.

Typically, the profile is reddish gray very channery loam about 6 inches thick, underlain by sandstone.

The soil is moderately permeable. Available water capacity is 9.3 to 1.0 inches. Effective rooting depth is 3 to 10 inches. Typically, there are many fine roots throughout the profile.

Representative profile is located along trail in NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 29, T. 13 N., R. 103 W.

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| A11 | 0-2 1/4 inches | Pinkish gray (7.5YR 6/2) very channery loam, dark brown (7.5YR 4/2) moist; vesicular crust; slightly hard, very friable, sticky, plastic; mildly alkaline (pH 7.8); abrupt wavy boundary. |
| A12 | 3/4-6 inches | Reddish gray (5YR 5/2) very channery loam, dark reddish brown (5YR 3/2) moist; moderate fine granular; soft, very friable, sticky, plastic; mildly alkaline (pH 7.8); clear wavy boundary. |
| R | 6-7 inches | Hard reddish brown sandstone. |

Depth to bedrock ranges from 3 to 10 inches. Content of coarse fragments ranges from 25 to 70 percent. The color has hues of 5YR or 7.5YR. Reaction ranges from pH 7.4 to 7.8.

The Starley, very shallow variant soils are mapped with the Cheadle soils.

TEELER SERIES

The Teeler series are well drained soils formed in greavelly alluvium on gently sloping to steep alluvial fans and terraces and mountain slopes. Slopes are 3 to 30 percent. Elevation is 7,400 to 9,000 feet. Vegetation dominantly black sagebrush with some big sagebrush in the draws, prairie junegrass and bluebunch wheatgrass.

Precipitation is 13 to 16 inches. Mean annual soil temperature is about 43°F., and the frost-free season is 50 to 70 days.

Typically, the surface layer is brown gravelly sandy loam about 4 inches thick. The subsoil is brown gravelly sandy clay loam about 6 inches thick. The substratum is pinkish gray very gravelly sandy loam about 17 inches thick, underlain by cobbly sandy loam to 60 inches.

This soil is moderately permeable. Available water capacity is 2.7 to 5.0 inches. Effective rooting depth is 60 inches or more. Typically, this soil has many fine and few medium roots to 10 inches and few fine and few medium roots to 40 inches.

Representative profile is located about 3 miles southeast of Red Creek Ranch in SE $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec.18, T. 12 N., R. 103W.

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| A1 | 0-4 inches | Brown (7.5YR 4/2) gravelly sandy loam, dark brown (7.5YR 3/2) moist; moderate fine granular; soft, very friable, slightly sticky, slightly plastic; 30 percent gravel; mildly alkaline (pH 7.6); clear wavy boundary. |
| B2t | 4-10 inches | Reddish brown (5YR 4/3) gravelly sandy loam, dark brown (7.5YR 3/3) moist; weak coarse subangular blocky parting to moderate medium and fine subangular blocky; common thin patchy clay f lms; slightly hard, friable, sticky, plastic; 40 percent gravel; common fine tubular pores; mildly alkaline (pH 7.8); clear wavy boundary. |
| C1ca | 10-23 inches | Pinkish gray (5YR 6/2) very gravelly sandy loam, reddish brown (5YR 4/3) moist; massive; soft, very friable, slightly sticky, slightly plastic; 50 percent gravel, 5 percent cobble; strong effervescence; moderately alkaline (pH 8.2); lime crusts (1/8 inch thick) on underside of gravel; gradual wavy boundary. |
| C2ca | 23-60 inches | Pinkish gray (5YR 6/2) cobbly sandy loam, reddish brown (5YR 4/3) moist; massive; soft, very friable, nonplastic; 50 percent gravel, 10 percent cobble, 5 percent stones; strong effervescence; moderately alkaline (pH 8.2); thin lime coatings on gravel. |

Content of rock fragments ranges from 30 to 50 percent on the surface and in the A horizons; and 35 to 80 percent in the B and C horizons. A few scattered stones lie on the surface. Depth of solum ranges from 8 to 15 inches.

The color of the A1 horizon has hues of 5YR to 10YR, values of 4 or 5 dry and 2 or 3 moist, and chromas of 2 or 3.

The color of the B2t horizon has hues of 5YR or 7.5YR, values of 4 or 5 dry and 2 or 3 moist, and chromas of 2 or 3.

The color of the C horizons have hues of 5YR or 7.5YR.

The Teeler soils are mapped with Teeman and Southface soils.

TEEMAN SERIES

The Teeman series are well drained soils formed in gravelly alluvium on gently sloping to steep alluvial fans, terraces and mountain slopes. Slopes are 3 to 30 percent. Elevation is 7,400 to 9,000 feet. Vegetation is dominantly black sagebrush and prairie junegrass, with some big sagebrush and blue-bunch wheatgrass in the draws.. Precipitation is 13 to 16 inches. Mean annual soil temperature is about 43°F., and the frost-free season is 50 to 70 days.

Typically, the surface layer is brown gravelly sandy loam about 10 inches thick. The subsoil is pinkish gray cobbly sandy loam about 20 inches thick. The substratum is pinkish gray stony sandy loam to 60 inches.

This soil has moderately rapid permeability. Available water capacity is to 1.7 to 5.0 inches. Effective rooting depth is 60 inches or more. Typically, these soils have many fine and medium roots to 10 inches, and few fine and medium roots to 30 inches.

Representative profile is located about 2.5 miles south of the Red Creek Ranch in NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Sec. 11, T. 12 N., R. 104 W.

All	0-3 inches	Brown (7.5YR 5/2) gravelly sandy loam, dark brown (7.5YR 3/2) moist; moderate fine granular; soft, very friable, slightly sticky, slightly plastic; 25 percent gravel; mildly alkaline (pH 7.6); clear wavy boundary.
A12	3-10 inches	Brown (7.5YR 5/2) gravelly sandy loam, dark brown (7.5YR 3/2) moist; weak medium subangular blocky; soft, very friable, slightly sticky, slightly plastic; 25 percent gravel; mildly alkaline (pH 7.8); clear wavy boundary.
Clca	10-60 inches	Light brown (7.5YR 6/4) cobbly sandy loam, brown (7.5YR 4/4) moist; massive; slightly hard, very friable, slightly sticky, nonplastic; 20 percent cobble, 30 percent gravel, and 5 percent stones in lower part; strong effervescence; moderately alkaline (pH 8.2); lime crusts on underside of gravel.

Content of rock fragments ranges from 15 to 50 percent in the A horizons and from 35 to 80 percent in the C horizons. A few scattered stones lie on the surface. Depth to effervescence ranges from 0 to 13 inches.

The color of the A1 horizons have hues of 5YR to 10YR, values of 4 or 5 dry and 3 moist, and chromas of 2 or 3.

The Teeman soils are mapped with Teeler, Libeg, Amsden, gravelly variant, Pishkun, coarse variant, and Southace soils.

Teeman-Teeler complex (706): This complex consists of about 60 percent Teeman gravelly sandy loam, 3 to 10 percent slopes, and about 40 percent Teeler gravelly sandy loam, 3 to 10 percent slopes. These soils occupy the smooth, gently to moderately sloping, mesa-like high alluvial fan remnants in the eastern part of the watershed.

Runoff is slow to medium and the erosion hazard is slight to moderate.

These soils are used for rangeland and wildlife habitat.

Loamy, 15 to 19 inch precipitation zone, range site.

THERMOPOLIS SERIES

The Thermopolis series are well drained, shallow soils formed in residuum from shale on gently sloping to steep uplands. Slopes are 3 to 30 percent. Elevation is 6,300 to 7,800 feet. Vegetation is big sagebrush, phlox, needleleaf sedge, and Sandberg bludgrass. Precipitation is 20 to 12 inches. Mean annual soil temperature is about 46°F, and the frost-free season is 60 to 90 days.

Typically, the profile is brown loam about 17 inches thick, underlain by soft platy shale.

This soil is moderately permeable. Available water capacity is 1.5 to 3.6 inches. Effective rooting depth is 10 to 20 inches. Typically, these soils have common fine and medium roots to 7 inches and few fine and medium roots to the bedrock.

Representative profile is located in SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 36, T. 13 N., R. 105 W.

A1	0-2 inches	Light brown (7.5YR) sandy loam, dark brown (7.5YR 4/4) moist; moderate medium crumb: slightly hard, very friable, nonsticky, nonplastic; slight effervescence, moderately alkaline (pH 8.2): clear smooth boundary.
C1	2-6 inches	Brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) moist; weak coarse crumb; soft, very friable, slightly sticky, slightly plastic; violent effervescence; moderately alkaline (pH 8.2): clear smooth boundary.
C2	6-17 inches	Pinkish gray (7.5YR 6/2) loam, brown (7.5YR 4/4) moist; massive: soft, very friable, slightly sticky, slightly plastic; violent effervescence; moderately alkaline (pH 8.4): clear wavy boundary.
TTC	17 inches	Soft, platy. reddish brown, calcareous shale.

Depth to shale ranges from 10 to 20 inches. Content of channery is usually less than 5 percent but ranges from 0 to 15 percent. The color of the profile has hues of 5YR or 7.5YR.

Thermopolis-Rock outcrop complex (526): This complex consists of about 25 percent Thermopolis sandy loam, 20 to 30 percent slopes, about 40 percent Rock outcrop, about 15 percent Redcreek fine sandy loam, 6 to 30 percent slopes, and about 15 percent Redwash sandy loam, 6 to 40 percent slopes. This complex occupies parts of the badlands areas on both sides of Red Creek. The soils are highly intermingled. Rock outcrop and Redwash soils predominate on southern slopes; Thermopolis and Redcreek soils predominate on northern slopes. Included, totaling about 5 percent, are Goslin and Fiveoh soils.

Runoff is rapid and the erosion hazard is severe. These soils have been severely gullied and are some of the main sediment producers to Red Creek.

They are used for rangeland and wildlife habitat.

Redcreek and Thermopolis soils; Shallow Loamy, 10 to 14 inch precipitation zone, range site.

Rock outcrop; no range site assigned.

Redwash soils: Very Shallow, 10 to 14 inch precipitation zone, range site.

TISWORTH SERIES

The Tisworth series are well drained, alkaline and saline soils formed in alluvium on gently to moderately sloping alluvial fans. Slopes are 3 to 10 percent. Elevation is 6,300 to 7,000 feet. Vegetation is greasewood, big sagebrush, shadscale, pricklypear cactus, and bottlebrush squirreltail. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is pale brown sandy loam about 3 inches thick. The subsoil is brown clay loam about 5 inches thick. The substratum is light brown loam and gravelly loam to 60 inches.

The soil is moderately permeable. Available water capacity is 2.5 to 4.0 inches. Effective rooting depth is 60 inches or more. There are many fine and few medium roots to 8 inches, few fine and medium roots to 24 inches, and very few roots below.

Representative profile is located 600 feet southwest of old sheep corral in NW $\frac{1}{2}$, Sec. 25, T. 12 N., R. 105 W.

A1	0-3 inches	Pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak medium platy: soft, very friable, slightly sticky, slightly plastic; strong effervescence; strongly alkaline (pH 9.0); abrupt wavy boundary.
B2t	3-8 inches	Brown (7.5YR) sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium columnar parting to moderate very fine subangular blocky: continuous moderately thick clay films on ped faces; hard, friable, sticky, plastic: common fine tubular pores; strong effervescence: very strongly alkaline (pH 9.4); conductivity 16 millimhos; clear wavy boundary.
B3ca	8-16 inches	Light brown (7.5YR 6/4) loam, brown 7.5YR 5/4) moist: weak and moderate coarse subangular blocky; slightly hard, very friable, sticky, plastic: few fine tubular

nores: strong effervescence; very strongly alkaline (pH 9.4): conductivity 30 millimhos.

- C1 16-24 inches Light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; massive; slightly hard, very friable, sticky. plastic: strong effervescence; very strongly alkaline (pH 9.2); conductivity 20 millimhos.
- C2 24-60 inches Pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; massive; soft, very friable, sticky, plastic; 20 percent gravel; strong effervescence; strongly alkaline (pH 8.6).

Content of coarse fragments ranges from 0 to 15 percent in the A and B horizons and from 0 to 35 percent in the C horizons with some cobbles in the lower C horizons.

The color of the A1 horizon has hues of 7.5YR or 10YR values of 5 or 6 dry and 4 or 5 moist, and chromas of 1 or 3. Reaction ranges from pH 8.5 to 9.0.

The color of the B2t horizon has hues of 5YR, values of 5 or 6 dry and 4 or 5 moist, and chromas of 3 or 4. Texture is sandy clay loam, clay loam or loam. Reaction is strongly or very strongly alkaline.

The color of the C horizons have values of 5YR or 7.5YR. Textures are loam, gravelly loam and gravelly sandy loam.

Tisworth-Goslin complex (507): This complex consists of about 60 percent Tisworth sandy loam, 30 to 10 percent slopes, and about 30 percent Goslin fine sandy loam, 3 to 10 percent slopes. These soils occupy alluvial fans to the west and northwest of Red Creek. They occur in an intermingled pattern. Included, totalling about 10 percent of the areas, are Fiveoh and Redcreek soils

Runoff is medium to rapid and the erosion hazard is moderate to severe.

These soils are used for rangeland and wildlife habitat.

Tisworth soils: Saline Upland, 10 to 14 inch precipitation zone, range site.
Goslin soils: Loamy, 10 to 14 inch precipitation zone, range site.

TISWORTH, FINE VARIANT

The Tisworth, fine variant soils are well drained, strongly saline and alkaline soils formed in alluvium on gently sloping alluvial fans. The slopes are 1 to 6 percent. Elevation is 6,300 to 7,300 feet. Vegetation is greasewood, shadscale, Gardner saltbush, and bottlebrush squirreltail. Precipitation is 10 to 12 inches. Mean annual soil temperature is about 45°F., and the frost-free season is 60 to 90 days.

Typically, the surface layer is very pale brown sandy loam about 3 inches thick. The subsoil is brown clay loam or clay, about 5 inches thick. The substratum is stratified loam and fine sandy loam to 60 inches.

This soil is slowly permeable. Available water capacity is 3.0 to 5.4 inches.

Effective rooting depth is 60 inches or more. Typically, there are common fine and medium roots to 15 inches, and few fine and medium roots to 50 inches.

Representative profile is located on an alluvial fan on the east side of Red Creek in the center of Sec. 11, T. 12 N., R. 105 W.

- | | | |
|-----|--------------|---|
| A1 | 0-3 inches | Very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; moderate very thick platy; slightly hard, very friable, slightly sticky, nonplastic; strong effervescence, moderately alkaline (pH 8.4); abrupt wavy boundary. |
| B2t | 3-8 inches | Brown (7.5YR 5/4) clay loam, dark brown (7.5YR 4/4) moist; strong medium columnar with continuous thick clay films, parting to moderate fine subangular blocky with patchy clay films; hard, friable, very sticky, very plastic; common fine tubular pores; slight effervescence; very strongly alkaline (pH 9.2); clear wavy boundary. |
| B3 | 8-20 inches | Brown (7.5YR 6/4) loam, dark brown (7.5YR 4/4) moist moderate coarse prismatic parting to weak medium subangular blocky; hard, friable, sticky, plastic; common fine tubular pores; strong effervescence; strongly alkaline (pH 8.8); clear wavy boundary. |
| C1 | 20-43 inches | Light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, slightly sticky; slightly plastic; strong effervescence; moderately alkaline (pH 8.4); clear wavy boundary. |
| C2 | 43-60 inches | Light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; slight effervescence; moderately alkaline (pH 8.4). |

Thickness of solum ranges from 13 to 20 inches. The content of gravel is 0 to 15 percent.

The color of the A1 horizon ranges in hue from 5YR to 10YR, values of 6 or 7 dry and 3 or 4 moist. Texture is sandy loam or fine sandy loam.

The color of the B2t horizon has hues of 7.5YR or 5YR, values of 4 or 5 dry and 3 or 4 moist, and chromas of 3 or 4. Texture is clay loam or silty clay loam. Structure is strong or moderate.

The color of the C horizon has hues of 5YR or 7.5YR. Texture is loam or fine sandy loam. Reaction is moderately or strongly alkaline.

Tisworth, fine variant-Ravalli complex (501): This complex consists of about 60 percent Tisworth, fine variant, sandy loam, 2 to 6 percent slopes, and about 30 percent Ravalli fine sandy loam, 1 to 6 percent slopes. These soils occur on alluvial fans along Red Creek. Included are about 10 percent Goslin fine sandy loam.

Runoff is medium and the erosion hazard is moderate: some deep gullies occur.

This complex is used for rangeland and wildlife habitat.

Saline Lowland, 10 to 14 inch precipitation zone, range site.

UINTA SERIES

The Uinta series are well drained soils formed in glacial till or alluvium on sloping to steep mountain slopes. Slopes are 10 to 30 percent. Elevation is 8,300 to 9,00 feet. Vegetation is alpine fir, aspen, ground juniper, lodgepole pine and pinegrass. Precipitation is 15 to 19 inches. Mean annual soil temperature is about 40°F., and the frost-free season is 50 to 70 days.

Typically, the surface is covered by an organic layer about 1 inch thick underlain by dark gray sandy loam layer about 1 inch thick. The subsurface layer is pinkish gray sandy loam and loam about 10 inches thick. The subsoil and substratum are reddish brown clay loam to 60 inches.

The soil is moderately permeable. Available water capacity is 8.5 to 10.8 inches. Effective rooting depth is 60 inches or more. There are common fine, medium and coarse roots to 23 inches, and few fine, medium and coarse roots to 28 inches with very few roots below.

Representative profile located on north slope of Pine Mountain in NE $\frac{1}{4}$ of NW $\frac{1}{4}$. Sec. 4, T. 12 N., R. 103 W.

O	1-0 inch	Leaves, needles, and partially decomposed organic matter.
A1	0-1 inch	Very dark grayish brown (10YR 3/2) sandy loam, black (10YR 2/1) moist: moderate fine granular: soft, very friable: nonsticky, nonplastic: neutral (pH 6.6); abrupt wavy boundary.
A2	1-6 inches	Pinkish gray (7.5YR 6/2) sandy loam, brown (7.5YR 4/2) moist; weak coarse platy; slightly hard, very friable, slightly sticky, slightly plastic, neutral (pH 6.6); clear wavy boundary.
B1	6-11 inches	Pinkish gray (7.5 YR 6/2) loam, brown (7.5YR 4/2) moist: moderate coarse subangular blocky parting to weak very fine subangular blocky; hard, friable, sticky, plastic: common fine tubular pores; neutral (pH 6.8): clear wavy boundary.

- B22t 11-28 inches Reddish brown (5YR 5/3) clay loam, reddish brown (5YR 4/3) moist; moderate coarse subangular blocky parting to moderate medium and fine subangular blocky; thin continuous clay films on ped faces; hard, firm, very sticky, very plastic; common fine tubular pores; neutral (pH 6.8); clear wavy boundary.
- B23t 28-50 inches Reddish brown 5YR 5/3) clay loam, reddish brown (5YR 4/3) moist; moderate coarse subangular blocky parting to weak very fine subangular blocky; hard, firm, very sticky, very plastic; few fine tubular pores; neutral (pH 7.2); clear wavy boundary.
- C 50-60 inches Reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/4) moist; massive; hard, friable, sticky, plastic; slight effervescence: moderately alkaline (pH 8.0).

Content of rock fragments; gravel, cobble, and stones, throughout the profile ranges from 0 to 35 percent. Pockets and layers, 6 to 12 inches thick, of loam or clay loam with 10YR hues occur intermittently in some pedons.

The Uinta soils are mapped in association with the Scout soils.

USE AND MANAGEMENT OF THE SOILS

This section explains the land capability classification of the Soil Conservation Service and discusses the use and management of the soils of the Red Creek Area for rangeland. Estimated yields obtainable under a high level of management are given in the Soil Survey Interpretations (SCS-SOILS-5 forms) sheets in the Appendix.

Capability Grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The groups are made according to the limitations of the soils when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible by unlikely major reclamation projects; and does not apply to crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, for forest trees, or engineering.

In the capability system all kinds of soils are grouped at three levels--the capability class, subclass, and unit. These are discussed in the following paragraphs.

CAPABILITY CLASSES, The broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use defined as follows:

Class I soils have few limitations that restrict their use. There are no soils classed as I in the Red Creek Area.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices. There are no soils classed II in the Red Creek Area.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.

Class V soils are not likely to erode but have other limitations impractical to remove that limit their use largely to pasture, range, woodland, or wildlife. There are no soils classed as V in the Red Creek Area.

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife.

Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife, water supply, or to esthetic purposes.

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding a small letter--e, w, s, or c--to the class numeral; for example, IIe. The letter e shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; w shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); s shows that the soil is limited mainly because it is shallow, droughty, or stony; and c, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V can contain, at the most, only the subclasses indicated by w, s, and c because the soils in class V are subject to little or no erosion though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife, or recreation.

CAPABILITY UNITS are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants to require similar management and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally designated by adding an Arabic numeral to the subclass symbol: for example, IVe2 or VIe5. Thus, in one symbol the Roman numeral designates the capability class or degree of limitation, the small letter indicates the subclass or kind of limitation as defined in the foregoing paragraph, and the Arabic numeral specifically identifies the capability unit within each subclass.

The land capability classification for each mapping unit is shown in the Guide to Mapping Units and in the appropriate soil survey interpretation sheets. Mapping units designated as complexes are given a single land capability classification, but the land capability classification for components of other multiple soil units is given individually.

Range Sites and Condition Classes ^{2/}

Different kinds of soil vary in their capacity to produce grass, forbs, and brush. Soils that produce about the same kinds and amounts of herbage within the same precipitation zone make up a range site.

Range sites are kinds of rangeland that differ in their ability to produce vegetation. The soils of any one range site produce about the same kind of climax vegetation. Climax vegetation is the stabilized plant community: it reproduces itself and does no change as long as the environment remains unchanged. Throughout the prairie and the plains the climax vegetation consists of the plants that were growing there when the region was first settled. If cultivated crops are not grown, the most productive combination of forage plants on a range site is generally the climax vegetation.

Decreasers are plants in the climax vegetation that tend to decrease in relative amount under close grazing. They generally are the tallest and most productive perennial grasses and forbs and the most palatable to livestock.

Increasers are plants in the climax vegetation that increase in relative amount as the more desirable decreaser plants are reduced by close grazing. They are commonly shorter than decreasers and are generally less palatable to livestock.

Invaders are plants that cannot compete with plants in the climax plant community for moisture, nutrients, and light. Hence, invaders come in and grow along with increasers after the climax vegetation has been reduced by grazing. Many are annual weeds, some are shrubs that have some grazing value, but others have little value for grazing.

Four range condition classes are used to indicate the degree of departure from the potential, or climax, vegetation brought about by grazing or other uses. The classes show the present condition of the native vegetation on a range site in relation to the native vegetation that could grow there.

A range is in excellent condition if 76 to 100 percent of the vegetation is of the same kind as that in the climax stand. It is in good condition if the percentage is 51 to 75, in fair condition if the percentage is 26 to 50, and in poor condition if the percentage is less than 25.

Range condition is judged according to standards that apply to the particular range site. It expresses the present kind and amount of vegetation in relation to the climax plant community for that site.

Potential forage production depends on the range site. Current forage production depends on the range condition and the moisture available to plants during their growing season.

A primary objective of good range management is to keep rangeland in excellent or good condition. If this is done, water is conserved, yields are improved,

^{2/}Charles C. McAfee, Range Conservationist, Soil Conservation Service, assisted with this section and made the range inventory in the field.

and the soils are protected. The problem is recognizing important changes in the kind of cover on a range site. These changes take place gradually and can be misinterpreted or overlooked. Growth encouraged by heavy rainfall may lead to the conclusion that the range is in good condition when actually the cover is woody and the long-term trend is toward lower production. On the other hand, some rangeland that has been closely grazed for short periods under the supervision of a careful manager may have a degraded appearance that temporarily conceals its quality and ability to recover.

Feasibility of Range Improvements

Proper grazing use, deferred grazing, and planned grazing systems are feasible on all sites. To achieve these practices the following improvements should be considered:

1. Stockwater Development

Stockwater in this area is limited and needs improvements. There is a potential for numerous ponds and springs to be developed to serve water for livestock and wildlife. Water should be developed so livestock do not travel over one mile to water.

2. Fencing

Fencing is feasible on all sites for livestock distribution and to permit implementation of planned grazing systems. The movement of wildlife in the area should be considered in locating and designing fences.

3. Brush Management

Brush management is feasible on Loamy and Shallow Loamy range sites where big sagebrush is over 30 percent of the total composition and on Saline Low-land sites where rabbitbrush or greasewood is over 30 percent of the total composition. With proper planning and consideration of wildlife habitat most of the area in the above sites could be sprayed to improve vegetative composition and ground cover.

4. Seeding

Areas of Loamy range site could be seeded to tame species for use as specialized pastures. Crested wheatgrass would be the most adapted species.

Descriptions of Range Sites

In the following pages the soils or range sites of the Red Creek area are described, and the climax plants and principal invaders on the sites are named. Also given is an estimate of the potential annual yield of air-dry herbage for each site when it is in excellent condition, in years with above-average growing conditions, and in years with poor growing conditions. Also included is a statement about the feasibility of range improvement in each precipitation zone. The soils in each site can be determined by referring to the "Guide to Mapping Units" at the back of this soil survey.

Subirrigated (10 to 14 inch precipitation zone) range site.

The soils of this site have a nonsaline and/or nonalkaline water table near the surface for most of the growing season. The surface soil is usually deep and has a high content of organic matter.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: basin wildrye, tufted hairgrass, slender wheatgrass, and Nebraska sedge and about 40 percent of the following increaser species: western wheatgrass, inland sedge, saltic rush, chokecherry, and willows. If range condition deteriorates, woody species and low growing sedges become more dominant.

Approximate total annual yield of this site in excellent condition in an average year is 3,700 lbs. per acre air dry but varies from 3,000 lbs. in less favorable years to 4,300 lbs. in more favorable years.

Overflow (10 to 14 inch precipitation zone) range site.

The soils of this site vary in texture from sand to sandy loams. These soils occur along stream courses which receive periodic overflow from adjacent slopes.

Potential vegetation in excellent condition consists of about 55 percent of the following decreaser species: basin wildrye, slender wheatgrass, Letterman needlegrass, Canby bluegrass, and needle-and-thread grass and about 45 percent of the following increaser species: western wheatgrass, prairie junegrass, Sandberg bluegrass, big sagebrush, silver sagebrush, and snowberry.

If range condition deteriorates, sagebrush, rabbitbrush, and western wheatgrass become more dominant.

Approximate total annual yield of this site in excellent condition in an average year is 1,800 lbs. per acre air dry but varies from 1,200 lbs. in less favorable years to 2,200 lbs. in more favorable years.

Saline Lowland (10 to 14 inch precipitation zone) range site.

The soils of this site are moderately to strongly saline and/or alkaline. This may be found only in the subsoils. A water table usually exists below 3 feet which is beneficial to the woody plants but not to the majority of the grass or forbs. These soils may occasionally be overflowed.

Potential vegetation in excellent condition consists of about 45 percent of the following decreaser species: alkali sacaton, basin wildrye, western wheatgrass, bottlebrush squirreltail, four-wing saltbush, Gardner saltbush, and about 55 percent of the following increaser species: inland saltgrass, Sandberg bluegrass, milkvetch, creosote, and rubber rabbitbrush. If range condition deteriorates, creosote becomes more dominant.

Approximate total annual yield of this site in excellent condition is 1,800 lbs. per acre air dry but varies from 1,200 lbs. in less favorable years to 2,500 lbs. in more favorable years.

Loamy (10 to 14 inch precipitation zone) range site.

The soils of this site are light colored and exceed 20 inches in depth. Textures range from very fine sandy loams through clay loams. Permeability is moderately rapid to moderately slow.

Potential vegetation in excellent condition consists of about 50 percent of the following decreaser species: bluebunch wheatgrass, Letterman needlegrass, Canby bluegrass, bottlebrush squirreltail, Indian ricegrass, serviceberry, and winterfat and about 50 percent of the following increaser species: thickspike wheatgrass, prairie junegrass, Sandberg bluegrass, big sagebrush, and several kinds of forbs. If range condition deteriorates, big sagebrush becomes more dominant.

Approximate total annual yield of this site in excellent condition in an average year is 1,200 lbs per acre air dry but varies from 700 lbs. in less favorable years to 1,500 lbs. in more favorable years.

Shallow Loamy (10 to 14 inch precipitation zone) range site.

The soils of this site range in texture from very fine sandy loams to clay loams. Soil depths range from about 10 inches to 20 inches. This site may also include some deep gravelly and/or cobbly soils on south and west facing slopes which react like shallow soils.

Potential vegetation in excellent condition consists of about 65 percent of the following decreaser species: bluebunch wheatgrass, thickspike wheatgrass, bottlebrush squirreltail, Indian ricegrass, bitterbrush, and winterfat and about 35 percent of the following increaser species: Prairie junegrass, Sandberg bluegrass, needleleaf sedge, big sagebrush, low rabbitbrush, skunkbush, and several species of forbs. If range condition deteriorates, in creasing forbs become more dominant

Approximate total annual yield of the site in excellent condition in an average year is 900 lbs. per acre air dry but varies from 700 lbs. in less favorable years to 1,200 lbs. in more favorable years.

Saline Upland (10 to 14 inch precipitation zone) range site.

The soils of this site are light colored and exceed 20 inches in depth. The topsoil has a high salt content and/or exchangeable sodium content.

Potential vegetation in excellent condition consists of about 90 percent of the following decreaser species: bottlebrush squirreltail, Indian ricegrass, western wheatgrass, and Gardner saltbush and about 20 percent of the following increasers: Sandberg bluegrass, greasewood, winterfat, and several forbs. If range condition deteriorates, brasses and Gardner saltbush decrease and annuals invade.

Approximate total annual yield of this site in excellent condition in an average year is 600 lbs. per acre air dry but varies from 400 lbs. in less favorable years to 750 lbs. in more favorable years.

Steer Loamy (10 to 14 inch precipitation zone) range site.

The soils of this site exceed 40 inches in depth and occur on slopes in excess of 30 percent, generally south facing slopes. The textures are cobbly loam or cobbly sandy loam.

Potential vegetation in excellent condition consists of about 40 percent of the following decreaser species; bluebunch wheatgrass, letterman needlegrass, serviceberry, and spike fescue; and about 60 percent of the following increaser species; big sagebrush, prairie junegrass, Sandberg bluegrass, snowberry, and thickspike wheatgrass.

Approximate total annual yield of this site in excellent condition in an average year is 1,200 lbs. per acre air dry but varies from 900 lbs. in less favorable years to 1,600 lbs. in more favorable years.

Very Shallow (10 to 14 inch precipitation zone) range site.

The soils of this site are 3 to 10 inches deep over bedrock but includes areas of exposed bedrock and pockets of deep soil.

Potential vegetation in excellent condition consists of about 45 percent of the following decreaser species: bluebunch wheatgrass, Indian ricegrass, thickspike wheatgrass, bottlebrush squirreltail, mountain mahogany, and bitterbrush and about 50 percent of the following increaser species: Sandberg bluegrass, needleleaf sedge, juniper, black sagebrush, rabbitbrush, skunkbush, and several forbs. If range condition deteriorates, increasing forbs and Sandberg bluegrass become more dominant.

Approximate total annual yield of this site in excellent condition in an average year is 450 lbs. per acre air dry but varies from 250 lbs. in less favorable years to 600 lbs. in more favorable years.

Loamy (15 to 19 inch precipitation zone) range site.

The soils of this site are normally dark colored and exceed 20 inches in depth. Textures range from fine sandy loams through clay loams with varying amounts of gravel.

Potential vegetation in excellent condition consists of about 60 percent of the following decreaser species: Columbia needlegrass, spike fescue, mountain bromegrass, slender wheatgrass, and bitterbrush and about 40 percent of the following increaser species: Idaho fescue, thickspike wheatgrass, prairie junegrass, letterman needlegrass, big sagebrush, and several forb species.

If range condition deteriorates, big sagebrush becomes more dominant.

Approximate total annual yield of this site in excellent condition in an average year is 2,000 lbs. per acre air dry but varies from 1,400 lbs. in less favorable years to 2,400 lbs. in more favorable years.

Approximate total annual yield of this site in excellent condition in an average year is 1,400 lbs. per acre air dry but varies from 1,000 lbs. in less favorable years to 1,700 lbs. in more favorable years.

Very Shallow 15 to 19 inch precipitation zone) range site.

The soils of this site are 3 to 10 inches deep over sandstone, but this site will include areas of exposed bedrock and pockets of deep soil. Bedrock may be fractured which allows brush species to grow.

Potential vegetation in excellent condition consists of about 55 percent of the following decreaser species: bluebunch wheatgrass, Idaho fescue, timber danthonia, spike fescue, mountain muhly, bitterbrush, and mountain mahogany and about 40 percent of the following increaser species: thickspike wheatgrass, Sandberg bluegrass, prairie junegrass, Letterman needlegrass, big sagebrush, black sagebrush, snowberry, and several forb species. If range condition deteriorates, increasing forbs, Sandberg bluegrass, and sagebrush become more dominant.

Approximate total annual yeild of this site in excellent condition in an average year is 600 lbs. per acre air dry but varies from 450 lbs. in less favorable years to 750 lbs. in more favorable years.

TABLE 2 - RANGE INVENTORY DATA

Mapping Unit No.	Mapping Unit Name	Total Acres	Soil Name	Percent	Outstanding Characteristic	Range Site Name	Site	Grasses												Forbs					Woody Plants								Total
								Blucbunch wheatgrass	Bottlebrush squirreltail	Canby bluegrass	Indian ricegrass	Inland saltgrass	Idaho fescue	King fescue	Mountain brome	Needleandthread	Prairie junegrass	Sandberg bluegrass	Thickspike wheatgrass	Alkali bluegrass	Erigeron	Eriogonum	Lupine	Phlox	Other	Pussytoes	Big sagebrush	Black sagebrush	Greasewood	Juniper	Nuttall saltbush	Rabbitbrush	
500	Aquents and Fluvents	520	Aquents Fluvents	50 Wet 50 Deep		Overflow, 10-14" P.Z. Subirrigated, 10-14" P.Z.					40			10				15		10						5				20	100		
501	Tisworth variants complex	420	Tisworth, fine variant Ravalli Goslin	60 Saline & alkaline 30 Saline & alkaline 10 Deep		Saline Lowland, 10-14"P.Z. Saline Lowland, 10-14"P.Z. Loamy, 10-14" P.Z.		5 5						10 10 10						5 5 40	45 45	15 15				5 5 5				5 5 5	100 100 100		
502	Goslin complex	1,030	Goslin Thermopolis Redcreek Tisworth Rock outcrop	80 Deep 5 Shallow 5 Shallow 5 Saline & alkaline 5 Rock		Loamy, 10-14" P.Z. Shallow Loamy, 10-14"P.Z. Shallow Loamy, 10-14"P.Z. Saline Upland, 10-14"P.Z. No site assigned.		10 30 10	5 10 10			10 5 20	10 10					5 15 5	5 25 10			45 10	15			5 5 5 5	10			5 5 5 5	100 100 100 100 100		
503	Almy complex	1,530	Almy Tisworth Goslin Fiveoh Redcreek	70 Deep 15 Saline & alkaline 5 Deep 5 Deep, limy 5 Shallow		Loamy, 10-14" P.Z. Saline Upland, 10-14"P.Z. Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Shallow Loamy, 10-14"P.Z.			5 10 10				10 10 5 20	5 10 20				5 5 5 5	50 5 40 30 10		45		15	20		5 5 5 5				5 5 5 5	100 100 100 100 100		
504	Castello-Brownsto association	3,660	Castello Brownsto Brownsto, steep Cragosen Thermopolis	55 Deep, limy 35 Deep, gravelly 4 Deep, gravelly 3 Shallow, gravelly 3 Shallow		Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Shallow Loamy, 10-14" P.Z. Shallow Loamy, 10-14" P.Z.	1		5 10				5 10					10	45							5			5 5	5 5	100		
505	Cragosen-Brownsto-Thermopolis complex	3,340	Cragosen Brownsto Thermopolis Rock outcrop Almy Goslin Redcreek	25 Shallow, gravelly 25 Deep, gravelly 25 Shallow 10 Rock 5 Deep 5 Deep 5 Shallow		Shallow Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Shallow Loamy, 10-14" P.Z. No site assigned. Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Shallow Loamy, 10-14" P.Z.	1		5 30	10 10			5 5	10 10				10 15 5 5	45 25							5 5				5 5	5 5	100 100 100 100 100 100	
507	Tisworth-Goslin complex	1,220	Tisworth Goslin Almy Fiveoh	60 Saline & alkaline 20 Deep 10 Deep 10 Deep, limy		Saline Upland, 10-14" P.Z. Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Loamy, 10-14" P.Z.		5 10					10 10 5 20	10 10 5 20				5 5 5 10	5 40 50 30	45	15				5				5 5 5	5 100 100 100			
509	Redcreek-Thermopolis complex	13,600	Redcreek Thermopolis Redwash Rock outcrop Goslin Tisworth	30 Shallow 30 Shallow 20 Very shallow 15 Rock 3 Deep 2 Saline & alkaline		Shallow Loamy, 10-14" P.Z. Shallow Loamy, 10-14" P.Z. Very shallow No site assigned. Loamy, 10-14" P.Z. Saline Upland, 10-14" P.Z.		10 30 30	10 10			20 5	10 10 10			5 5		5 15 10	10 25 10			10				5 5	10			5 5 5	5 100 100 100 100		
512	Brownsto-Goslin complex	1,040	Brownsto Goslin Fiveoh	70 Deep, gravelly 25 Deep 5 Deep, limy		Loamy, 10-14" P.Z. Loamy, 10-14" P.Z. Loamy, 10-14" P.Z.	1		5 10	10 5 10				5 10 20	10 10			10 5 5	45 40 30							5 5				5 5 5	5 100 100		
513	Spool-Rock outcrop complex	1,240	Spool Rock outcrop Unnamed Unnamed	40 V. shallow, sandy 30 Rock 20 Shallow, sandy 10 Deep, sandy, saline & alkaline		Very Shallow, 10-14" P.Z. No site assigned. Shallow Sandy, 10-14" P.Z. Saline Lowland, 10-14" P.Z.		10	5				5				5 5	10 10	10 5 30	5 40 5	5 45	30 15		5		10				5 5	100		

TABLE 2 - RANGE INVENTORY DATA (Cont'd.)

[illegible]

TABLE 2 - RANGE INVENTORY DATA (Cont'd.)

Mapping Unit No.	Mapping Unit Name	Total Acres	Soil Name	Percent	Outstanding Characteristic	Range Site Name	Site	Grasses										Forbs					Woody Plants										Totals
								Bluebunch wheatgrass	Bottlebrush squirreltail	Indian ricegrass	King fescue	Mountain bromo	Needleandthread	Prairie junegrass	Sandberg bluegrass	Thickspike wheatgrass	Alkali bluegrass	Eriogeron	Eriogonum	Lupine	Phlox	Other	Pussytoes	Big sagebrush	Black sagebrush	Greasewood	Juniper	Nuttall saltbush	Rabbitbrush	Shadscale	Spineless horsebrush	True mountain mahogany	
709	Southace-Teeman complex	9,650	Southace	20	Deep, gravelly	Steep Loamy, 10-14" P.Z.																											
			Teeman	40	Deep, gravelly	Loamy, 15-19" P.Z.	10																										
			Teeler	20	Deep, gravelly	Loamy, 15-19" P.Z.	25			5			10	5				5	55	5								5					
			Amsden	5	Deep	Loamy, 15-19" P.Z.																											
			Libeg	5	Deep	Loamy, 15-19" P.Z.																											
			Cheadle	4	Shallow	Shallow Loamy, 15-19" P.Z.	26						14	10			5	5		35								5					
			Unnamed	4	Moderately deep	Loamy, 15-19" P.Z.																											
			Rock outcrop	2	Rock	No site assigned.																											
710	Pishkun-Rock outcrop association	3,390	Pishkun	40	Deep, channery	Loamy, 15-19" P.Z.																											
			Rock outcrop	30	Rock	No site assigned.																											
			Cheadle	10	Shallow, very channery	Shallow Loamy, 15-19" P.Z.	26						14	10			5	5		35							5						
			Starley, very shallow variant	10	V. shallow, V. channery	Very Shallow, 15-19" P.Z.																											
			Unnamed	10	Moderately deep	Loamy, 15-19" P.Z.																											
715	Jenkinson-Roxal association	1,260	Jenkinson	30	Shallow	Shallow Loamy, 15-19" P.Z.	25			25	5		15				5		5	10	10												
			Roxal	20	Shallow	Shallow Loamy, 15-19" P.Z.																											
			Leavitt	20	Deep	Loamy, 15-19" P.Z.																											
			Rock outcrop	10	Rock	No site assigned.																											
			Unnamed	15	Moderately deep	Loamy, 15-19" P.Z.																											
			Unnamed	5	Deep	Loamy, 15-19" P.Z.																											
R3	Rock outcrop	300	--		--																												
R4	Rock outcrop-Redwash complex	4,430	Rock outcrop	65	Rock	No site assigned																											
			Redwash	20	Very shallow	Very Shallow, 10-14" P.Z.	30									5	5		5	10		30			10	5							
			Thermopolis	10	Shallow	Shallow Loamy, 10-14" P.Z.	30		10			5						5	15		25				5		100						
			Goslin	2	Deep	Loamy, 10-14" P.Z.	10			5		10							5		40				5								
			Fiveoh	1	Deep, limy	Loamy, 10-14" P.Z.				10			5		20				5	10	5	30		5	5								
			Tisworth	1	Saline & alkaline	Saline Upland, 10-14" P.Z.									10	10					5		45	15		5							
			Redcreek	1	Shallow	Shallow Loamy, 10-14" P.Z.	10		10			20					5		5	10	10		10		5	10	5						
R6	Rock outcrop-Southace association	1,350	Rock outcrop	40	Rock	No site assigned.																											
			Southace	40	Deep, gravelly	Steep Loamy, 10-14" P.Z.																											
			Cragosen	20	Shallow, gravelly	Shallow Loamy, 10-14" P.Z.																											

WOODLAND

About 1,200 acres of the Red Creek Area is mapped out as woodland. Two soils, the Scout-Uinta association, map symbol 702, comprise the main wooded areas which occupy most of the north and west slopes of Pine Mountain. Small groves of aspen occur in other map units, generally at elevations above 7,500 feet, but too small in area to map out. Conifer areas, somewhat larger than the aspen groves, occur on Tepee Mountain and on the north slopes in the southeast part of the area; the soils had not acquired the profile characteristics of a wooded soil and these areas were not separated in mapping.

Soil productivity for woodland is rated by determining the average site index of even-aged, fully stocked, unmanaged stands. Site index is the average height of the dominant trees at a specified age. For these ratings 100 years specified age was used.

The Scout-Uinta association consists of about 60 percent Scout soils and about 35 percent Uinta soils, and about 5 percent inclusions.

The Scout soils are deep gravelly and cobbly sandy loam with moderately rapid permeability and low available water capacity. They occur at elevations generally above the Uinta soils. They support mainly aspen, subalpine fir, and lodgepole pine. The average site index for aspen is 35, for subalpine fir 55, and for lodgepole pine 60. Small areas with higher indices occur where soil and moisture conditions are especially favorable. The erosion hazard on roads and trails is slight to moderate depending on steepness of slope and the care with which the roads are constructed. The windthrow hazard is slight.

The Uinta soils are deep clay loam with moderate permeability and high available water capacity. They occur on the mountain slopes at elevations generally below the Scout soils. They support mainly aspen and subalpine fir. The average site index for aspen is 45 and for subalpine fir is 75. Most of the pure aspen stands are on the west slopes where they are exposed to prevailing winds and afternoon sun both of which take their toll of moisture. The north slopes with a more favorable moisture situation have mixed stands of aspen and fir, here the site index for aspen is higher. The conifer stands in the southeast part of the survey area are on soil of similar permeability and available water capacity and have similar site indices.

ENGINEERING USES OF THE SOILS

This section is useful to those who need information about soils used as structural material or as foundation upon which structures are built. Among those who can benefit from this section are planning commissions, town and city managers, land developers, engineers, contractors, and farmers.

Among properties of soils highly important in engineering are permeability, strength, compaction characteristics, soil drainage condition, shrink-swell potential, grain size, plasticity, and soil reaction. Also important are depth to the water table, depth to bedrock, and soil slope. These properties in various degrees and combinations, affect construction and maintenance of roads, airports, pipelines, foundations for small buildings, irrigation systems, ponds and small dams, and systems for disposal of sewage and refuse.

Information in this section of the soil survey can be helpful to those who:

1. Select potential residential, industrial, commercial, and recreational areas.
2. Evaluate alternate routes for roads, highways, pipelines, and underground cables.
3. Seek sources of gravel, sand, or clay.
4. Plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for controlling water and conserving soil.
5. Correlate performance of structures already built with properties of the kinds of soil on which they are built for the purpose of predicting performance of structures on the same or similar kinds of soil in other locations.
6. Predict the trafficability of soils for cross-country movement of vehicles and construction equipment.
7. Develop preliminary estimates pertinent to construction in a particular area.

Most of the information in this section is presented in Table 3 and in the individual soil interpretations sheet (SCS-SOILS-5) for each series, which shows several estimated soil properties significant to engineering and/or interpretations for various engineering uses.

This information along with the field sheets and other parts of this publication can be used to make interpretations in addition to those given in Table 5 and in the interpretive sheets and also can be used to make other useful maps.

This information, however, does not eliminate need for further investigations at sites selected for engineering works, especially works that involved heavy loads or that require excavations to depths greater than those shown in the tables, generally depths greater than 6 feet. Also, inspection of sites,

especially the small ones, is needed because many delineated areas of a given soil mapping unit may contain small areas of other kinds of soil that have strongly contrasting properties and different suitabilities or limitations for soil engineering.

Some of the terms used in this soil survey have special meaning to soil scientists that is not known to all engineers. The Glossary defines many of these terms commonly used in soil science.

Engineering Soil Classification Systems

The two systems most commonly used in classifying samples of soils for engineering are the Unified system used by the SCS engineers, Department of Defense, and others and the AASHO system adopted by the American Association of State Highway Officials (1).

In the Unified system soils are classified according to particle size distribution, plasticity, liquid limit, and organic matter. Soils are grouped in 15 classes. There are eight classes of coarse-grained soils identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils identified as Pt. Soils on the borderline between two classes are designated by symbols for both classes; for example, ML-CL.

The AASHO system is used to classify soils according to those properties that affect use in highway construction and maintenance. In this system a soil is placed in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. In group A-1 are gravelly soils of high bearing strength or the best soils for subgrade (foundation). At the other extreme, in group A-7 are clay soils that have low strength when wet and that are the poorest soils for subgrade. Where laboratory data are available to justify a further breakdown, the A-1, A-2, and A-7 groups are divided as follows: A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As additional refinement, the engineering value of a soil material can be indicated by a group index number. Group indexes range from 0 for the best material to 20 or more for the poorest. The AASHO classification for tested soils with group index numbers in parentheses is shown in Table 3; the estimated classification without group index numbers is given in Table 4, and in the individual soil survey interpretations sheets for all soils mapped in the survey area.

USDA texture is determined by the relative proportions of sand, silt, and clay in soil material that is less than 2.0 millimeters in diameter. "Sand, silt, clay," and some of the other terms used in the USDA textural classification are defined in the Glossary.

Soil Properties Significant to Engineering

Several estimated soil properties significant in engineering (3) are given in the interpretive sheets (SCS-SOILS-5). These estimates are made for typical soil profiles by layers sufficiently different to have different significance for soil engineering. The estimates are based on field observations made in the course of mapping, on test data for these and similar soils, and on experience with the same kinds of soil in other counties. Following are

explanations of some of the estimated properties:

Depth to bedrock is distance from the surface of the soil to the upper surface of the rock layer.

Depth to seasonal high water table is distance from the surface of the soil to the highest level that ground water reaches in the soil in most years.

Soil texture is described in the standard terms used by the Department of Agriculture. These terms take into account relative percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that contains 7 to 27 percent clay, 23 to 50 percent silt, and less than 52 percent sand. If the soil contains gravel or other particles coarser than sand, an appropriate modifier is added, as for example, "gravelly loamy sand." "Sand, silt, clay," and some of the other terms used in USDA textural classification are defined in the Glossary of this soil survey. Textural classes are abbreviated on the interpretive sheets.

Liquid limit and plasticity index indicate the effect of water on the strength and consistence of soil material. As the moisture content of a clayey soil is increased from a dry state, the material changes from a semisolid to a plastic state. If the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material changes from the semisolid to plastic state and the liquid limit from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is plastic. Liquid limit and plasticity index are estimated in the interpretive sheets. In Table 3 the data on liquid limit and plasticity index are based on tests of soil samples.

Permeability is that quality of a soil that enables it to transmit water or air. It is estimated on basis of those soil characteristics observed in the field, particularly structure and texture. The estimates in Table 4 and in the interpretive sheets do not take into account lateral seepage or such transient soil features as plowpans and surface crusts.

Available water capacity is the ability of soils to hold water for use by most plants. It is commonly defined as the difference between the amount of water in the soil at field capacity and the amount at the wilting point of most crop plants.

Reaction is the degree of acidity or alkalinity of a soil expressed in pH values. The pH value and terms used to describe soil reaction are explained in the Glossary.

Salinity refers to the amount of soluble salts in the soil. It is expressed as the electrical conductivity of the saturation extract in millimhos per centimeter at 25°C. Salinity affects the suitability of a soil for crop production, its stability when used as construction material, and its corrosiveness to metals and concrete.

Shrink-swell potential is the relative change in volume to be expected of soil material with changes in moisture content; that is, the extent to which the soil shrinks as it dries out or swells when it gets wet. Extent of shrinking and swelling is influenced by the amount and kind of clay in the soil. Shrinking and swelling of soils causes much damage to building foundations, roads, and other structures. A high shrink-swell potential indicates a hazard to maintenance of structures built in, on, or with material having this rating.

Corrosivity, as used in Table 4 and in the interpretive sheets, pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. Rate of corrosion of uncoated steel is related to soil properties such as drainage, texture, total acidity, and electrical conductivity of the soil material. Corrosivity for concrete is influenced mainly by the content of sodium or magnesium sulfate but also by soil texture and acidity. Installations of uncoated steel that intersect soil boundaries or soil horizons are more susceptible to corrosion than installations entirely in one kind of soil or in one soil horizon. A corrosivity rating of low means that there is a low probability of soil-induced corrosion damage. A rating of high means that there is a high probability of damage so that protective measures for steel and more resistant concrete should be used to avoid or minimize damage.

Engineering Interpretations of Soils

The estimated interpretations (3) in SCS-SOILS-5, the soil survey interpretations sheets are based on the engineering properties of soils shown in Table 3 and in the section, "Estimated Soil Properties Significant to Engineering," of the interpretive sheets, on test data for soils in this survey area and others nearby or adjoining, and on the experience of engineers and soil scientists with the soils of Sweetwater County. In SCS-SOILS-5 forms, the interpretive sheets, ratings are used to summarize limitation or suitability of the soils for all listed purposes other than for drainage of cropland and pasture, irrigation, ponds and reservoirs, embankments, and terraces and diversions. For these particular uses the soil features not to be overlooked in planning, installation, and maintenance, are listed.

Soil limitations are indicated by the ratings slight, moderate, and severe. Slight means soil properties generally favorable for the rated use, or in other words, limitations that are minor and easily overcome. Moderate means that some soil properties are unfavorable but can be overcome or modified by special planning and design. Severe means soil properties so unfavorable and so difficult to correct or overcome as to require major soil reclamation, special designs, or intensive maintenance.

Soil suitability is rated by the terms good, fair, and poor, which have, respectively, meanings approximately parallel to the terms slight, moderate and severe.

Following are explanations of some of the items included in the soil survey interpretations sheets.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into natural soil. The soil material from a depth of 18 inches to 6 feet is evaluated. The soil properties

considered are those that affect both absorption of effluent and construction and operation of the system. Properties that affect absorption are permeability, depth to water table or rock, and susceptibility to flooding. Slope is a soil property that affects difficulty of layout and construction and also the risk of soil erosion, lateral seepage, and downslope flow of effluent. Large rocks or boulders increase construction costs.

Sewage lagoons are shallow ponds constructed to hold sewage within a depth of 2 to 5 feet, long enough for bacteria to decompose the solids. A lagoon has a nearly level floor and sides or embankments of compacted soil material. The assumption is made that the embankment is compacted to medium density and the pond is protected from flooding. Properties are considered that affect the pond floor and the embankment. Those that affect the pond floor are permeability, organic matter, and slope; and if the floor needs to be leveled, depth to bedrock becomes important. The soil properties that affect the embankment are the engineering properties of the embankment material as interpreted from the Unified Soil Classification and the amounts of stone, if any, that influence the ease of excavation and compaction of the embankment material.

Shallow excavations are those that require digging or trenching to a depth of less than 6 feet; as for example, excavations for pipelines, sewer lines, phone and power transmission lines, basements, open ditches, and cemeteries. Desirable soil properties are good workability, moderate resistance to sloughing, gentle slopes, absence of rock outcrops or big stones, and freedom from flooding to a high water table.

Dwellings, as rated in the interpretive sheets, are not more than three stories high and are supported by foundation footings placed in undisturbed soil. The features that affect the rating of a soil for dwellings are those that relate to ease of excavation. Soil properties that affect capacity to support load are wetness, susceptibility to flooding, density, plasticity, texture, and shrink-swell potential. Those that affect excavation are wetness, slope, depth to bedrock, and content of stones and rocks.

Sanitary landfill is a method of disposing of refuse in dug trenches. The waste is spread in thin layers, compacted, and covered with soil throughout the disposal period. Landfill areas are subject to heavy vehicular traffic. Some soil properties that affect suitability for landfill are ease of excavation, hazard of polluting ground water, and trafficability. The best soils have moderately slow permeability, withstand heavy traffic, and are friable and easy to excavate. Unless otherwise stated the ratings in the interpretive sheets apply only to a depth of about 6 feet; and, therefore, limitation ratings of slight or moderate may not be valid if trenches are to be much deeper than that. For some soils reliable predictions can be made to a depth of 10 or 15 feet; regardless of that, every site should be investigated before it is selected.

Local roads and streets, as rated in the interpretive sheets, have an all-weather surface expected to carry automobile traffic all year. They have a subgrade of underlying soil material; a base consisting of gravel, crushed rock, or soil material stabilized with lime or or cement; and a flexible or

rigid surface, commonly asphalt or concrete. These roads are graded to shed water and have ordinary provisions for drainage. They are built mainly from soil at hand, and most cuts and fills are less than 6 feet deep.

Soil properties that most affect design and construction of roads and streets are load supporting capacity and stability of the subgrade and the workability and quantity of cut and fill material available. The AASHTO and Unified classifications of the soil material, and also the shrink-swell potential, indicate traffic supporting capacity. Wetness and flooding affect stability of the material. Slope, depth to hard rock, content of stones and rocks, and wetness affect ease of excavation and amount of cut and fill needed to reach an even grade.

Road fill is soil material used in embankments for roads. The suitability ratings reflect (1) the predicted performance of soil after it has been placed in an embankment that has been properly compacted and provided with adequate drainage and (2) the relative ease of excavating the material at borrow areas.

Sand and gravel are used in great quantities in many kinds of construction. The designation or ratings in the interpretive sheets provide guidance about where to look for probable sources. A soil rated as a good or fair source of sand or gravel generally has a layer at least 3 feet thick, the top of which is within a depth of 6 feet. The ratings do not take into account thickness of overburden, location of the water table, or other factors that affect mining of the materials and neither do they indicate quality of the deposit.

Topsoil is used for topdressing an area where vegetation is to be established and maintained. Suitability is affected mainly by ease of working and spreading the soil material as for preparing a seedbed, natural fertility of the material or its response of plants when fertilizer is applied, and absence of substances toxic to plants. Texture of the soil material and its content of stone fragments are characteristics that affect suitability, but also considered in the ratings is damage that will result at the area from which topsoil is taken.

Pond reservoir areas hold water behind a dam or embankment. Soils suitable for pond reservoir areas have low seepage, which is related to their permeability and depth to fractured or permeable bedrock or other permeable material.

Embankments, dikes, and levees require soil material resistant to seepage and piping and of favorable stability, shrink-swell potential, shear strength, and compactibility. Presence of stones or organic material in a soil are among factors that are unfavorable.

Drainage of cropland and pasture is affected by such soil properties as permeability, texture, and structure: depth to claypan, rock, or other layers that influence rate of water movement: depth to the water table; slope, stability in ditchbanks: susceptibility to stream overflow salinity or alkalinity; and availability of outlets for drainage.

Irrigation of a soil is affected by such features as slope: susceptibility

to stream overflow, water erosion or soil blowing: soil texture: content of stones; accumulations of salts and alkali: depth of root zone: rate of water intake at the surface; permeability of soil layers below the surface layer and in fragipans or other layers that restrict movement of water: amount of water held available to plants: and need for drainage or depth to water table or bedrock.

Soil Test Data

Table 3 contains engineering test data for some of the major soil series in the Red Creek area. These tests were made to help evaluate the soils for engineering purposes. The engineering classifications given are based on data obtained by mechanical analyses and by tests to determine liquid limits and plastic limits.

Compaction (or moisture-density) data are important in earthwork. If a soil material is compacted at successively higher moisture content, assuming that the compactive effort remains constant, the density of the compacted material increases until the optimum moisture content is reached. After that density decreases with increase in moisture content. The highest dry density obtained in the compactive test is termed maximum dry density. As a rule, maximum strength of earthwork is obtained if the soil is compacted to the maximum dry density.

TABLE 3
ENGINEERING TEST DATA¹ FOR SOIL SAMPLES TAKEN FROM 13 SOIL PROFILESSheet _____ of _____
Date _____U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Soil name and location	Parent material	Report No.	Depth	Horizon	Moisture-density ²		Mechanical analysis ³																Liquid Limit	Plasticity Index	Classification				
					Maximum Dry Density	Optimum Moist.	Percentage passing sieve														Percentage smaller than				AASHTO ⁴	Unified ⁵			
							3-in.	2-in.	1 1/2-in.	1-in.	3/4-in.	3/8-in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 60 (0.25 mm.)	No. 200 (0.074 mm.)	0.05 mm.	0.02 mm.	0.005 mm.	0.002 mm.								
ALMY FINE SANDY LOAM, SW ¹ / ₄ , SW ¹ / ₄ , SEC. 1, T. 12 N., R. 104 W.	MEDIUM AND MODERATELY COARSE, CALCAREOUS ALLUVIUM FROM SANDY SHALE.	74-65	Inches 25-60	Cca	pcf	Pct.											100	99		71.0					17	2			
AMSDEN GRAVELLY LOAM, SW ¹ / ₄ , SE ¹ / ₄ , SEC. 15, T. 12 N., R. 104 W.	MODERATELY FINE TEXTURED, GRAVELLY ALLUVIUM AND GLACIAL TILL.	73-1280	22-38	B2T		20							100	98	97	92		61.9							29	10	A-4(0)	CL	
BROWNSTO GRAVELLY SANDY LOAM, SW ¹ / ₄ , NW ¹ / ₄ , SEC. 28, T. 13 N., R. 105 W.	GRAVELLY ALLUVIUM.	74-59	10-60	C	115	15				25	100	93	86	82	76	72	61	56	48		22.1					28	9		
BROWNSTO LOAM, CENTER SEC. 4, T. 12 N., R. 104 W.	GRAVELLY ALLUVIUM	74-60	14-40	C2							100	87	77	72	64	61	52	47	40		16.2				26	NP			
LEAVITT SILT LOAM, CENTER SEC. 1, T. 13 N., R. 105 W.	MEDIUM AND MODERATELY FINE TEXTURED ALLUVIUM AND RESIDIUM FROM SANDY SHALE.	74-64	12-27	B22T										100	99	98	97		86.0						45	21			
GOSLIN FINE SANDY LOAM, NW ¹ / ₄ , NW ¹ / ₄ , SEC. 9, T. 12 N., R. 105 W.	MODERATELY COARSE TEXTURED, CALCAREOUS ALLUVIUM.	73-1276	16-35	C2								100	96	90	86	78	68	59	40		4.3				27	9	A-2-4(0)	SW	
GOSLIN FINE SANDY LOAM, NW ¹ / ₄ , NW ¹ / ₄ , SEC. 9, T. 12 N., R. 105 W.	MODERATELY COARSE TEXTURED, CALCAREOUS ALLUVIUM.	73-1277	16-35	C2										100	100	88	62		21.5						16	2	A-2-4(0)	SM	
LISEG LOAM, SW ¹ / ₄ , SW ¹ / ₄ , SEC. 20, T. 13 N., R. 103 W.	MODERATELY FINE TEXTURED, GRAVELLY ALLUVIUM AND GLACIAL TILL.	73-1278	12-24	B2T					20		100	99	97	93	88	82	79	67		43.2					19	6	A-4(0)	SM-SC	
MCCORT GRAVELLY SANDY LOAM, 500' S. OF CENTER SEC. 9, T. 12 N., R. 103 W.	MODERATELY COARSE TEXTURED GRAVELLY ALLUVIUM FROM BISHOP CONGLOMERATE GEOLOGICAL FORMATION.	73-1281	35-60	C								91	84	71	61	50	42	37	26		8.9				NV	NP	A-1-A(0)	GW-GM	
PISHKUM CHANNERY LOAM, NW ¹ / ₄ , SW ¹ / ₄ , SEC. 3, T. 12 N., R. 103 W.	MODERATELY FINE TEXTURED CHANNERY AND GRAVELLY ALLUVIUM AND COLLUVIUM.	74-62	8-50	C					5						100	96	92	84		69.6					45	22			
SCOUT COBBLY SANDY LOAM, SW ¹ / ₄ , SW ¹ / ₄ , SEC. 3, T. 12 N., R. 103 W.	MODERATELY COARSE TEXTURED, GRAVELLY ALLUVIUM FROM BISHOP CONGLOMERATE GEOLOGICAL FORMATION	73-1275	13-40	B2							100	92	86	76	58	45	39	29		9.3					NV	NF	A-1-A(0)	GW-GM	
SOUTHACE GRAVELLY LOAM, SE ¹ / ₄ , NE ¹ / ₄ , SEC. 13, T. 12 N., R. 104 W.	MEDIUM AND MODERATELY COARSE TEXTURED GRAVELLY ALLUVIUM	73-1279	20-50	C2ca					25		100	92	87	85	80	75	72	64		25.1					NV	NP	A-2-4(0)	SM	
UINTA SANDY LOAM, NE ¹ / ₄ , NW ¹ / ₄ , SEC. 4, T. 12 N., R. 103 W.	MODERATELY FINE ALLUVIUM AND GLACIAL TILL	74-61	11-23	B2T													100	99		74.3					34	19			
UNNAMED VERY STRONGLY ALKALINE INCLUSION IN 705 NW ¹ / ₄ , SW ¹ / ₄ , SEC. 14, T. 13 N., R. 105 W.	MODERATELY FINE TEXTURED COLLUVIUM	74-63	10-60	C									100	99	93	83		74.4							55	32			

Note: See reverse side for footnotes and signature.

HYDROLOGIC CLASSIFICATION OF SOIL SERIES

Hydrologic soil groups are used in watershed planning to estimate runoff from rainfall. Soil properties are considered that influence the minimum rate of infiltration obtained for a bare soil after prolonged wetting. These properties are: depth of seasonally high water table, intake rate and permeability after prolonged wetting, and depth to very slowly permeable layer. The influence of ground cover is treated independently--not in hydrologic soil groupings.

The soils have been classified into four groups, A through D, descriptions of which are given below. The group designation for each individual soil series is given in the SCS-SOILS-5 form for that soil.

A. (Low runoff potential.) Soils having high (rapid) infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands or gravels. These soils have a high rate of water transmission.

B. (Moderately low runoff potential.) Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures with moderately slow to moderately rapid permeability. These soils have a moderate rate of water transmission.

C. (Moderately high runoff potential.) Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, soils with moderately fine to fine texture, soils with slow infiltration due to salts or alkali, or soils with moderate water tables. These soils may be somewhat poorly drained. Well and moderately well drained soils with slowly and very slowly permeable layers (fragipans, hardpans, hard bedrock, and the like) at moderate depth (20-40 inches).

D. (High runoff potential.) Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, soils with very slow infiltration due to salts or alkali, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

POTENTIAL SLIDE HAZARD

The potential of any soil to slide is affected by the presence or absence of moisture, steepness of slope, soil texture, and properties of the bedrock that influence lubrication when wet.

The areas that have a potential slide hazard are primarily soils in Pishkun complex (705) map unit and in Pishkun-Rock outcrop association (710) map unit. Each soil series is rated as having a high, medium, or low potential slide hazard; this rating is for the soil 'in-site'. This rating is given in Table 4, page 64.

TABLE 4
POTENTIAL SLIDE HAZARD RATINGS

Soil Name	Rating	Soil Name	Rating
Almy	Medium	Ravalli	Medium
Amsden, gravelly variant	Medium to High	Redcreek	Medium
Brownsto	Low	Redwash	Medium
Castello	Medium	Roxal	Medium
Cheadle	Low	Scout	Low
Cragosen	Low	Southace	Low
Fiveoh	Medium	Spool	Low
Goslin	Medium	Starley, very shallow variant	Low
Jenkinson	Medium	Teeler	Low
Leavitt	Medium to High	Teeman	Low
Libeg	Medium	Thermopolis	Medium
McCort	Low	Tisworth	Medium
Pishkun	High	Tisworth, fine variant	Medium
Pishkun, coarse variant	Low	Uinta	Medium

USE OF SOILS FOR RECREATIONAL DEVELOPMENT

Knowledge of soils is necessary in planning, developing, and maintaining areas used for recreation. On the individual soil survey interpretations sheet, SCS-Soils-5 forms, the soils of the Red Creek Area are rated according to limitations that affect their suitability for camp areas, playgrounds, picnic areas, and paths and trails.

The soils are rated as having slight, moderate, or severe limitations for the specified uses. For all of these ratings it is assumed that a good cover of vegetation can be established and maintained. A limitation of slight means that soil properties are generally favorable and limitations are so minor that they easily can be overcome. A moderate limitation can be overcome or modified by planning, by design, or by special maintenance. A severe limitation means that costly soil reclamation, special design, intense maintenance, or a combination of these is required.

Camp areas are used intensively for tents and small camp trailers and the accompanying activities of outdoor living. Little preparation of the site is required other than shaping and leveling for tent and parking areas. Camp areas are subject to heavy foot traffic and limited vehicular traffic. The best soils have mild slopes, good drainage, a surface free of rocks and surface that is firm after rains but not dusty when dry.

Picnic areas are attractive natural or landscaped tracts used primarily for preparing meals and eating outdoors. These areas are subject to heavy foot traffic. Most of the vehicular traffic, however, is confined to access roads. The best soils are firm when wet but not dusty when dry, are free of flooding during the season of use, do not have slopes or stoniness that greatly increases cost of leveling sites or of building access roads.

Playgrounds are areas used intensively for baseball, football, badminton, and similar organized games. Soils suitable for this use need to withstand intensive foot traffic. The best soils have a nearly level surface free of coarse fragments and rock outcrops, good drainage, freedom from flooding during periods of heavy use, and a surface that is firm after rains but not dusty when dry. If grading and leveling are required, depth to rock is important.

Paths and trails are used for local and cross country travel by foot or horseback. Design and layout should require little or no cutting and filling. The best soils are at least moderately well drained, are firm when wet but not dusty when dry, are flooded not more than once during the season of use, have slopes of less than 15 percent, and have few or no rocks or stones on the surface.

WILDLIFE 3/

The Red Creek Area is a popular hunting ground. Nongame animals, predatory animals, and birds are also common. The Area can be divided into four general wildlife habitat types.

Wildlife Habitat Type 1

This habitat type consists of broad smooth alluvial fans and rolling uplands. The mapping units included in this type are: Castello-Brownsto association (504), the alluvial fans below Little Mountain traversed by the dirt road to Richards Gap; Brownsto-Goslin complex (512), the alluvial fans south of Richards Mountain; McCort gravelly sandy loam (701), the open rangeland soils on top of Pine Mountain; Teeman-Teeler complex (706), the high mesa-like areas southwest of Pine Mountain; Pishkun coarse variant-Teeman, brown phase association (708), the north slope of Richards Mountain; and Jenkinson-Roxal association (715), the rolling uplands above the basin rim. This type comprises about 11.6 percent of the Survey Area. Vegetation is dominated by black sagebrush, big sagebrush, and short grasses. It is on these soils that antelope graze. Sage grouse are common in unit 715, and bands of wild horses also roam on these soils. Mule deer reside in the ravines. Cottontail rabbits, jackrabbits, and morning doves also occur.

Wildlife Habitat Type 2

This habitat type consists of rough breaks, badlands, and rocky mountain sides. The mapping units included in this type are: Cragosen-Brownsto-Thermopolis complex (505), Redcreek-Thermopolis complex (509), Spool-Rock outcrop complex (513), Fiveoh association (523), Brownsto-Fiveoh association (524), Thermopolis-Rock outcrop complex (526), Pishkun complex (705), Pishkun-Rock outcrop association (710), Rock outcrop (R3), Rock outcrop-Redwash complex (R4), and Rock outcrop-Southace association (R6). This type comprises about 58 percent of the Survey Area. Vegetation is dominated by juniper, big sagebrush, and grasses. Much of the habitat type is bare of vegetation. The 705 and 710 units, which are at higher elevations, have small aspen groves and no juniper. This habitat type is utilized mainly by mule deer, chukar partridge, cottontail rabbit, and morning doves.

Wildlife Habitat Type 3

This habitat type consists of the gently sloping and sloping alluvial fans adjacent to Red Creek. The mapping units included in this type are: Aquents and Fluvents (500), Tisworth, fine variant-Ravalli complex (501), Goslin complex (502), Almy complex (503), and Tisworth-Goslin complex (507). This habitat type comprises about 6.7 percent of the Survey Area. These soils are heavily utilized by livestock as they are close to water and somewhat sheltered during severe weather. Some of these soils, mainly the 503 unit, have been converted to irrigated hayland. Deer browse the hay fields at night but generally livestock and ranching activity dominate. Cottontail rabbit, chukar partridge, and morning dove also reside in this habitat type.

3/ James W. June, Biologist, Wyoming Game and Fish Commission, assisted with this section.

Wildlife Habitat Type 4

This habitat type occupies the higher elevations, the mountain tops and upper slopes. The mapping units included in this type are: Scout-Uinta association (702); Libeg-Amsden, gravelly variant-Teeman complex (707); and Southace-Teeman-Teeler complex (709). This type comprises about 21.8 percent of the Survey Area. These are the woodland and high slopes with aspen groves. The 701 unit included in habitat type 1 could also be included in this habitat type. These are the areas utilized by elk; they are also utilized by mule deer and partially by antelope.

CLASSIFICATION OF SOILS

Soils are classified in order that we can more easily remember their significant characteristics. Classification enables us to assemble knowledge about the soils, to see their relationship to one another and to the whole environment, and to develop principles that help us to understand their behavior and their response to manipulation. First, through classification, and then through use of soils maps, we can apply our knowledge of soils to specific fields and other tracts of land.

The narrow categories of classification such as those used in detailed soil surveys allow us to organize and apply knowledge about soils in managing ranches, fields, and woodlands; in developing rural areas; in engineering work; and in many other ways. Soils are placed in broad classes to facilitate study and comparison in large areas such as countries and continents.

The system of soil classification currently used was adopted by the National Cooperative Soil Survey in 1965. Because this system is under continual study, readers interested in developments of the current system should search the latest literature available.

The current system of classification has six categories. Beginning with the broadest, these categories are: order, suborder, great group, subgroup, family, and series. In this system the criteria used as a basis for classification are soil properties that are observable and measurable. The properties are chosen, however, in order that the soils of similar kinds of morphology are grouped. In Table 4 the soil series of the Red Creek Area are placed in five categories of the current system. Classes of the current system are briefly defined in the following paragraphs:

Order - Ten soil orders are recognized. The properties used to differentiate among soil orders are those that tend to give broad climatic groupings of soils.

The two exceptions to this are the Entisols and Histosols which occur in many different climates. Each order is named with a word of three or four syllables ending in sol (Ent-i-sol).

Suborder - Each order is subdivided into suborders that are based primarily on those soil characteristics that seem to produce classes with the greatest genetic similarity. The suborders narrow the broad climatic range permitted in the orders. The soil properties used to separate suborders are mainly those that reflect either the presence or absence of waterlogging or soil differences resulting from the climate or vegetation. The names of suborders have two syllables. The last syllable indicates the order. An example is Argids (Arg is an abbreviation for the word "Argillic" meaning silicate clay that has been accumulated in a soil horizon after being leached out of an overlying layer; and "id" from Aridisols, meaning mineral soils low in organic matter and formed under low rainfall).

Great Group - Soil suborders are separated into great groups on the basis of uniformity in the kinds and sequence of major soil horizons and features. The horizons used to make separations are those in which clay, iron, or humus have accumulated; those that have pans that interfere with growth of roots, movement of water, or both; and thick, dark colored surface horizons. The features used are the self-mulching properties of clay, soil temperature, major differences in chemical composition (mainly calcium, magnesium, sodium and potassium), dark red and dark brown colors associated with basic rocks, and the like. The names of great groups have three or four syllables and are made by adding a prefix to the name of the suborder. An example is Haplargids (Hapl meaning a simple set of horizons and argids. Arg is an abbreviation for the word "argillic" meaning silicate clay that has been accumulated in a soil horizon after being leached out of an overlying layer; and "id" from Aridisols, meaning mineral soils low in organic matter and formed under low rainfall).

Subgroup - Great groups are subdivided into subgroups, one representing the central (typic) segment of the group, and others called intergrades that have properties of the group and also one or more properties of another great group, suborder, or order. Subgroups may also be made in those instances where soil properties intergrade outside of the range of any other great group, suborder, before the name of the great group. Examples are Typic Haplargids (a typical Haplargid) and Borollic Haplargids (more organic matter and colder temperatures than typic).

Family - Soil families are separated within a subgroup primarily on the basis of properties important to the growth of plants or on the behavior of soils when used for engineering. Among the properties considered are texture, mineralogy, reactions, soil temperature, permeability, thickness of horizons, and consistence. A family name consists of a series of adjectives preceding the subgroup name. The adjectives are the class names for texture, mineralogy, and so on that are used as family differentiae. See Table 5. An example is the fine-loamy, mixed, frigid family of Borollic Haplargids.

TABLE 5

SOIL SERIES CLASSIFIED ACCORDING TO THE CURRENT SYSTEM OF CLASSIFICATION

Series	Family	Subgroup	Order
Almy	Fine-loamy, mixed	Borollic Haplargid	Aridisols
Amsden	Fine-loamy, mixed	Argic Cryoboroll	Mollisolls
Brownsto	Loamy-skeletal, mixed	Borollic Calciorthid	Aridisols
Castello	Coarse-loamy, carbonatic	Borollic Calciorthid	Aridisols
Cheadle	Loamy-skeletal, mixed	Lithic Cryoboroll	Mollisolls
Cragosen	Loamy-skeletal, mixed (calcareous), frigid, shallow	Ustic Torriorthent	Entisols
Fiveoh	Coarse-loamy, mixed	Borollic Calciorthid	Aridisols
Goslin	Coarse-loamy, mixed (calcareous), frigid	Ustic Torriorthent	Entisols
Jenkinso	Loamy, mixed	Lithic Cryoboroll	Mollisol
Leavitt	Fine-loamy, mixed	Argic Cryoboroll	Mollisol
Libeg	Loamy-skeletal, mixed	Argic Cryoboroll	Mollisol
McCort	Loamy-skeletal, mixed	Typic Cryoboroll	Mollisol
Pishkun	Loamy-skeletal, mixed	Typic Cryorthent	Entisol
Pishkun, coarse variant	Loamy-skeletal, mixed (calcareous)	Typic Cryorthent	Entisols
Redcreek	Loamy, mixed (calcareous), frigid	Lithic Ustic Torriorthent	Entisol
Redwash	Loamy, mixed (calcareous), frigid	Lithic Ustic Torriorthent	Entisol
Roxal	Loamy, mixed (calcareous), shallow	Typic Cryorthent	Entisol
Scout	Loamy-skeletal, mixed	Typic Cryochrepts	Inceptisol
Southace	Loamy-skeletal, mixed (calcareous), frigid	Ustic Torriorthent	Entisol
Spool	Mixed, frigid	Lithic Torripsament	Entisol
Starley, very shallow variant	Loamy-skeletal, mixed	Lithic Cryoboroll	Mollisolls
Teeler	Loamy-skeletal, mixed	Argic Cryoboroll	Mollisol
Teeman	Loamy-skeletal, mixed	Typic Cryoboroll	Mollisol
Theropolis	Loamy, mixed (calcareous), frigid, shallow	Ustic Torriorthent	Entisol
Tisworth	Fine-loamy, mixed	Borollic Natrargid	Aridisol
Tisworth, fine variant	Fine-montmorillonitic	Borollic Natrargid	Aridisols
Uinta	Fine-loamy, mixed	Typic Cryoboralf	Alfisol

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GLOSSARY

- Alkali soil - Generally, a highly alkaline soil. Specifically, an alkali soil has so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that the growth of most crop plants is low from this cause.
- Alluvial fan - A sloping, fan-shaped mass of sediment deposited by a stream where it emerges from an upland onto a plain.
- Alluvium - Soil material, such as sand, silt, or clay, that has been deposited on land by streams.
- Available water capacity - The capacity of a soil to hold water in a form available to plants. Amount of moisture held in soil between field capacity, or about one-third atmosphere of tension, and the wilting coefficient, or about 15 atmospheres of tension.
- Calcareous soil - Soil containing sufficient calcium carbonate (often with magnesium carbonate) to effervesce visibly when treated with cold 0.1 normal hydrochloric acid.
- Channery - Fragments of thin, flat sandstone, limestone, schist, or hard shale up to 6 inches along the longer axis. A single piece is a fragment.
- Clay - As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Coarse fragments - Rock or mineral particles greater than 2.0 millimeters in diameter.
- Consistence, soil - The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:
- Loose - Noncoherent when dry or moist: does not hold together in a mass.
 - Friable - When moist, crushes easily under gentle pressure between thumb and forefinger, and can be pressed together into a lump.
 - Firm - When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.
 - Plastic - When wet, readily deformed by moderate pressure but can be pressed into a lump: will form a "wire" when rolled between thumb and forefinger.
 - Sticky - When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.
 - Hard - When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.
 - Soft - When dry, breaks into powder or individual grains under very slight pressure.
 - Cemented - Hard and brittle; little affected by moistening.
- Control section - (As used in the Soil Classification System of the National Cooperative Soil Survey in the United States) - Arbitrary depths of soil

material within which certain diagnostic horizons, features, and other characteristics are used as differentiae in the classification of soils. The thickness is specific for each characteristic being considered but may be different for different characteristics.

Depth, effective soil - The depth of soil material that plant roots can penetrate readily to obtain water and plant nutrients. It is the depth to a layer that differs sufficiently from the overlying material in physical or chemical properties to prevent or seriously retard the growth of roots.

Drainage, soil - As a natural condition of the soil, soil drainage refers to the frequency and duration of periods when the soil is free of saturation; for example, in well-drained soils the water is removed readily but not rapidly; in poorly drained soils the root zone is waterlogged for long periods unless artificially drained, and the roots of ordinary crop plants cannot get enough oxygen; in excessively drained soils the water is removed so completely that most crop plants suffer from lack of water. Strictly speaking, excessively drained soils are a result of excessive runoff due to steep slopes or low available waterholding capacity due to small amounts of silt and clay in the soil material.

Effervescence - The bubbling effect produced when HCL is added to a soil that contains free lime. Degree of effervescence is indicated as slight, strong, or violent which is an indication of the amount of free lime and also a general indication of being moderately alkaline or stronger.

Erosion - The wearing away of the land surface by wind (sandblast), running water, and other geological agents.

Horizon, soil - A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon - The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon - The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and, therefore, is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).

B horizon - The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon alone is the solum.

C horizon - The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer - Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Landscape - All of the natural features that distinguish one part of the earth's surface from another part, usually that portion of land or territory which the eye can comprehend in a single view, including all of its natural characteristics. In many places in this report "landscapes" are used to identify all of the features included within the delineated areas of complexes, associations, and undifferentiated groups.

Mottled - Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows; Abundance - few, common, and many; size - fine, medium, and coarse; and contrast - faint, distinct, and prominent. The size measurements are these: Fine, less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; medium, ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and coarse, more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Parent material (soil) - The horizon of weathered rock or partly weathered soil material from which soil has formed; horizon C in the soil profile.

Permeability, soil - The quality of a soil horizon that enables water or air move through it. Terms used to describe permeability are as follows: Very slow, slow, moderately slow, moderate, moderately rapid, rapid, and very rapid.

Reaction, soil - The degree of acidity or alkalinity of a soil expressed in pH values. . A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour," soil is one that gives an acid reaction: an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

<u>pH</u>		<u>pH</u>	
Extremely acid-----	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid----	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid-----	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid-----	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid-----	6.1 to 6.5	Very strongly alkaline	9.1 and higher

Residium - Unconsolidated, partly weathered mineral material that accumulates over disintegrating bedrock.

Ridge - A relatively narrow elevation which is prominent on account of the steep angle at which it rises.

Saline soil - A soil that contains soluble salts in amounts that impair growth of plants but that does not contain excess exchangeable sodium.

Sand - individual rock or mineral fragments in soils having diameters ranging from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

Secondary carbonates - The accumulation of calcium carbonate or lime into specks, threads, soft concretions, etc. within a soil horizon. The horizon must have more carbonates than the parent material is presumed to have had.

Silt - Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Slope classes -

Slope Range (%)	Simple Slopes	Complex Slopes
0-3	nearly level	nearly level
3-6	gently sloping	undulating
6-10	sloping	rolling
10-20	moderately steep	hilly
10-40	steep	steep
over 40	very steep	very steep

Soil profile - A vertical section of the soil from the surface through all its horizons, including C horizons. See horizon, soil.

Solum - The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

Structure, soil - The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary particles. The principal forms of soil structure are - platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are (1) single grain (each grain by itself, as in dune sand) or (2) massive (the particles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil - Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum - Technically, the part of the soil below the solum.

Surface layer - The uppermost layer of the soil.

Terrace (geological) - An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to floodplains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture, soil - The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,

and clay. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Underlying layer - That part of the soil below the surface layer if no "B" horizon is present.

Water table - The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

GUIDE TO MAPPING UNITS
Only major components of mapping units listed in this guide.
A dash (-) entry indicates no range site or capability unit designation.

Map Symbol	Mapping Unit Name	Described on page	Range Site		15-19" P.Z. Page	Capability Classification	
			10-14" P.Z. Name	Page		Dryland Symbol	Irrigated Symbol
500	Aquents and Fluents	8				IIIw63	IIIw63
	Aquents part		Subirrigated	46	--	--	--
	Fluents part		Overflow	46	--	--	--
501	Tisworth, fine variant-Ravalli complex	40				VIIIs71	VIIs71
	Tisworth, fine variant part		Saline Lowland	46	--	--	--
	Ravalli part		Saline Upland	47	--	--	--
502	Goslin complex	16	Loamy	47	--	VIe5	IVe5
503	Almy complex	7				VIe2	IVe2
	Almy part		Loamy	47	--	--	--
	Tisworth part		Saline Upland	47	--	--	--
504	Castello-Brownsto association	11	Loamy	47	--	VIe5	IVe5
505	Cragosen-Brownsto-Thermopolis complex	14				VIIel4	--
	Cragosen part		Shallow Loamy	47	--	--	--
	Brownsto part		Loamy	47	--	--	--
	Thermopolis part		Shallow Loamy	47	--	--	--
	Rock outcrop part		--	--	--	--	--
507	Tisworth-Goslin complex	33				VIIIs71	VIIs71
	Tisworth part		Saline Upland	47	--	--	--
	Goslin part		Loamy	47	--	--	--
509	Redcreek-Thermopolis complex	26				VIIel4	--
	Redcreek part		Shallow Loamy	47	--	--	--
	Thermopolis part		Shallow Loamy	47	--	--	--
	Redwash part		Very Shallow	48	--	--	--
	Rock outcrop part		--	--	--	--	--
512	Brownsto-Goslin complex	10	Loamy	47	--	VIe5	--
513	Snool-Rock outcrop complex	32				VIIIs17	--
	Snool part		Very Shallow	48	--	--	--
	Rock outcrop part		--	--	--	--	--
523	Fiveoh association	15				--	--
	Fiveoh part		Loamy	47	--	VIe5	--
	Thermopolis part		Shallow Loamy	47	--	VIIel4	--
524	Brownsto-Fiveoh association	10				--	--
	Brownsto part		Loamy	47	--	VIe5	--
	Fiveoh part		Loamy	47	--	VIe5	--
	Almy part		Loamy	47	--	VIe2	--
	Thermopolis part		Shallow Loamy	47	--	VIIel4	--
526	Thermopolis-Rock outcrop complex	37				VIIel4	--
	Thermopolis part		Shallow Loamy	47	--	--	--
	Rock outcrop part		--	--	--	--	--
	Redcreek part		Shallow Loamy	47	--	--	--
	Redwash part		Very Shallow	48	--	--	--
701	McCort gravelly sandy loam	21				--	--
	McCort gravelly sandy loam part		--		Loamy	49	VIe5
	McCort stony sandy loam part		--		Steep Stony	49	VIIIs9
702	Scout-Uinta association	30				--	--
	Scout part		--		Woodland	54	VIIIs9
	Uinta part		--		Woodland	54	VIe2
703	Cheadle complex	12				VIIIs17	--
	Cheadle part		--		Shallow Loamy	49	--
	Starley, very shallow variant part		--		Very Shallow	50	--
705	Pishkun complex	22				VIe2	--
	Pishkun part		--		Loamy	49	--
	Cheadle part		--		Shallow Loamy	49	--
706	Teeman-Teeler complex	36				VIe5	--
			--		Loamy	49	--
707	Iiber-Amsden, gravelly variant-Teeman complex	20				VIe2	--
	Iiber loam part		--		Loamy	49	--
	Iiber stony loam part		--		Coarse Upland	49	--
	Amsden, gravelly variant part		--		Loamy	49	--
	Teeman part		--		Loamy	49	--
708	Pishkun, coarse variant-Teeman brown phase association	24				VIe5	--
					Loamy	49	--
709	Southace-Teeman-Teeler complex	31				VIIe5	--
	Southace part		Steep Loamy	48	--	--	--
	Teeman part		--		Loamy	49	--
	Teeler part		--		Loamy	49	--
710	Pishkun-Rock outcrop association	23				--	--
	Pishkun part		--		Loamy	49	VIIe2
	Rock outcrop part		--		--	VIIIs83	--
	Cheadle part		--		Shallow Loamy	49	VIIel4
	Starley, very shallow variant part		--		Very Shallow	50	VIIIs17
715	Jenkinson-Roxal association	17				--	--
	Jenkinson part		--		Shallow Loamy	49	VIIel4
	Roxal part		--		Shallow Loamy	49	VIIel4
	Leavitt part		--		Loamy	49	IVe2
R3	Rock outcrop	27	--		--	VIIIs83	--
R4	Rock outcrop-Redwash complex	28				VIIIs83	--
	Rock outcrop part		--		--	--	--
	Redwash part		Very Shallow	48	--	--	--
R6	Rock outcrop-Southace association	28				--	--
	Rock outcrop part		--		--	VIIIs83	--
	Southace part		Steep Loamy	48	--	VIe5	--
	Cragosen part		Shallow Loamy	47	--	VIIel4	--

SOIL MAP SYMBOLS

WORKS AND STRUCTURES

Highways and roads

Good motor, paved.....



Poor motor, dirt.....



Trail.....



Buildings.....



BOUNDARIES, MARKS, AND MONUMENTS

Stateline.....



Township and section
corners, recovered.....



Soil Survey Area Boundary.....



Soil boundary and symbol.....



SPECIAL SYMBOLS

Rock outcrop.....



Stony.....



Very stony.....



Gravel.....



Sand spot.....



Saline spot.....



Gully.....



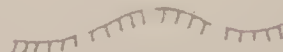
Dam and reservoir.....



Escarpment, Bedrock.....



Escarpment, Other.....



Stream, perennial.....



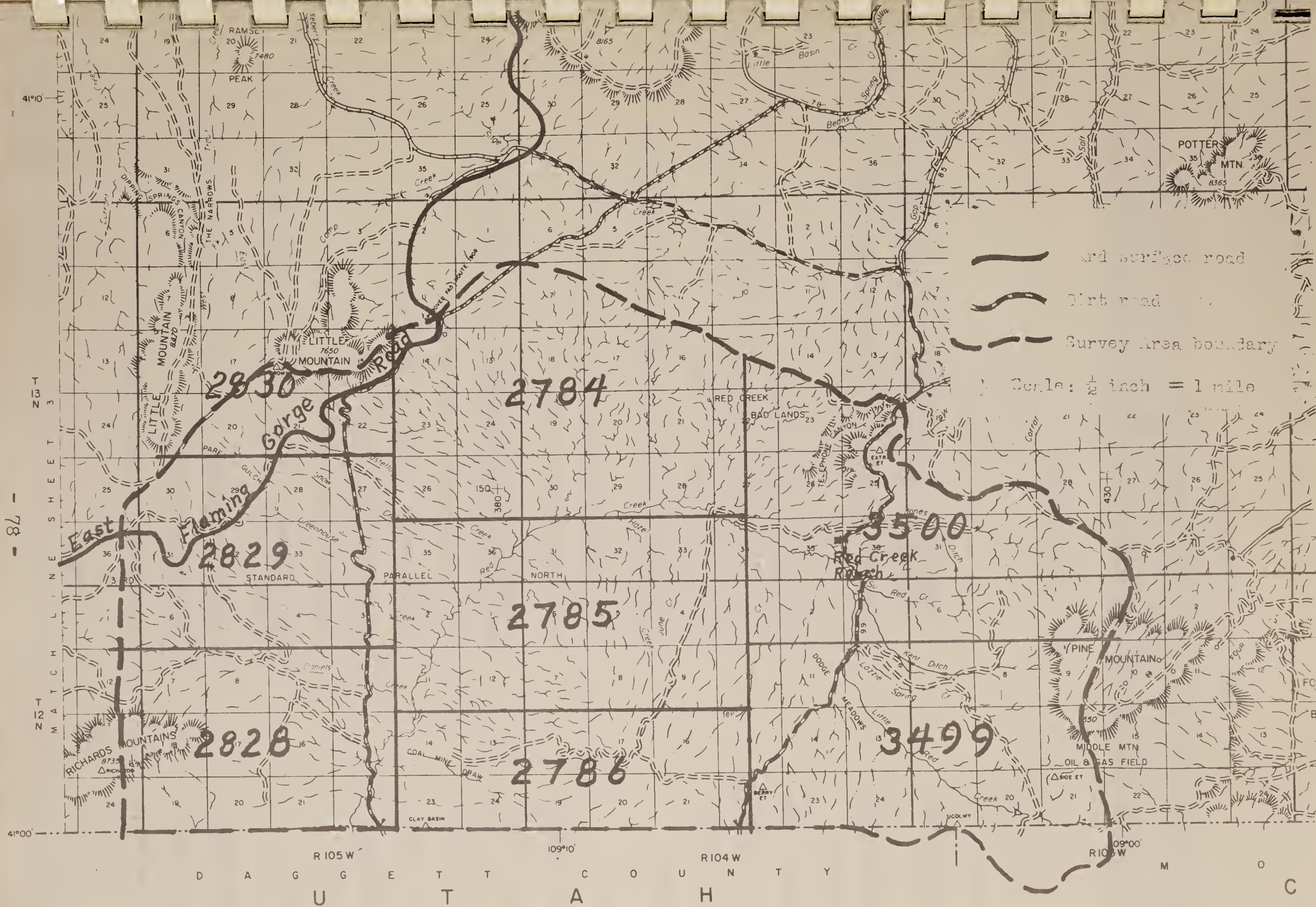
Stream, intermittent.....



Spring.....



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SOIL SURVEY FIELD SHEET INDEX

SOIL SURVEY INTERPRETATIONS

This section contains the Soil Survey Interpretation sheets, SCS-SOILS-5 forms, for each soil series mapped in the survey area, and for variants and phases that differ significantly from their respective series. Also included is a List of Key Phrases to explain the limitation and suitability ratings.

LIST OF KEY PHRASES

<u>Key Phrases</u>	<u>Explanation</u>
Area Reclaim	Borrow areas hard to reclaim.
Cemented Pan	Hardpan layer that restricts water movement, root penetration, and workability by machinery.
Compressible	Decrease in soil volume excessive under load.
Corrosive	Soils corrode uncoated steel pipe.
Cutbanks Cave	Walls of cuts not stable.
Deep to Water	Deep to permanent water table during dry season.
Depth to Rock	Bedrock too close to surface.
Droughty	Soils cannot hold enough water for plants during dry periods.
Dusty	Soil particles detach easily and cause dust.
Erodes Easily	Water erodes soil easily.
Excess Alkali	Exchangeable sodium affects soil properties and restricts growth of plants.
Excess Lime	Carbonates restrict plant growth.
Excess Salt	Soluble salts restrict plant growth.
Fast Intake	Water infiltrates rapidly.
Favorable	Features of soil favorable.
Floods	Soil floods by stream overflow, runoff, or high tides.
Frost Action	Freezing may damage structures.
Hard to Pack	Difficult to compact.
High Sulfates	Water-soluble sulfates (as SO_4).

APPENDIX



Key PhrasesExplanation

Large Stones	Rock fragments 10 inches or more across.
Low Strength	Not enough strength to adequately support the load.
No Water	Too deep to ground water.
Not Needed.	Practice not applicable.
Piping	Water may form tunnels or pipelike cavities.
Poor Outlets	Difficult or expensive to install outlets for drainage.
Rock Outcrops	Outcrops of fixed rock.
Rooting Depth	Soil is thin over layer that restricts root growth.
Seepage	Water and other fluids move through soil too fast for potential use.
Shrink-swell	Soil expands significantly on wetting and shrinks on drying.
Slope	Slope is too great.
Slow Intake	Water infiltration restricted.
Small stones	Contains many rock fragments less than 10 inches across.
Thin layer	Inadequate thickness of suitable soil.
Too Clayey	Soil slippery and sticky when wet and slow to dry.
Too Sandy	Soft, loose material makes vehicular and foot traffic difficult.
Unstable Fill	Banks of fills likely to cave or slough.
Wet	Soil wet during period of use.

SOIL SURVEY INTERPRETATIONS

KEYING ONLY										RECORD NO.										CONTROL										STATE										MLRA(S)										CLASSIFICATION AND BRIEF SOIL DESC										KIND OF UNIT										SERIES										UNIT NAME										ALMY																																																																					
RECORD NO.										CONTROL										STATE										MLRA(S)										CLASSIFICATION AND BRIEF SOIL DESC										KIND OF UNIT										SERIES										UNIT NAME										ALMY																																																																															
CLASS										DESC										PROP										FOOTNOTE										ESTIMATED SOIL PROPERTIES										PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE										LIQUID LIMIT										PLASTICITY INDEX																																																																																									
0-6										FSL										SM, SM-SC, SC										A-4										0-5										85-100										75-100										55-75										35-50										15-25										NP-10																																																											
6-25										SICL, CL										CL										A-6, A-7										0-5										85-100										75-100										70-100										60-90										35-45										15-25																																																											
25-60										FSL										SM, SM-SC, SC										A-4										0-5										85-100										75-100										55-75										35-50										15-25										NP-10																																																											
DEPTH (IN.)										USDA TEXTURE										UNIFIED										AASHO										FRACT. > 3 IN. (PCT)										PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE										LIQUID LIMIT										PLASTICITY INDEX																																																																																									
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3										25-60										FSL										SM, SM-SC, SC										A-4										0-5										85-100										75-100										55-75										35-50										15-25										NP-10																																																	
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DEPTH (IN.)										PERMEABILITY (IN/HR)										AVAILABLE WATER CAPACITY (IN/IN)										SOIL REACTION (PH)										SALINITY (MMHOS/CM)										SHRINK-SWELL POTENTIAL										CORROSION										EROSION FACTORS										WIND EROD. GROUP																																																																															
PROP										051										2.0 - 6.0										.12 - .16										7.9 - 8.4										0 - 2										LOW										STEEL										CONCRETE										K										T										5										3																																							
2										SAME										0.6 - 2.0										.14 .20										7.9 - 9.0										2 - 8										MODERATE										HIGH										LOW										.28										5										3																																																	
3										DEPTH										2.0 - 6.0										.09 - .12										7.9 - 9.0										2 - 8										LOW										HIGH										MODERATE										.24																																																																					
4										AS																																																																																																																																																					
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FLOODING										HIGH WATER TABLE										CEMENTED PAN										BEDROCK										SUBSIDENCE										HYD GRP										POTENTIAL FROST ACTION																																																																																																			
FREQUENCY										DURATION										MONTHS										DEPTH (FT)										KIND										MONTHS										DEPTH (IN)										HARDNESS										DEPTH (IN)										HARDNESS										INITIAL (IN)										TOTAL (IN)																																																	
PROP										061										NONE										> 6																																																																																																																																	
FOOTNOTES										SANITARY FACILITIES										KEYING ONLY										FOOTNOTES										SOURCE MATERIAL																																																																																																																							
SEPTIC										071										SLIGHT										FILL										191										ROADFILL										FAIR - FROST ACTION, SHRINK-SWELL, LOW STRENGTH																																																																																																			
2										SEPTIC TANK																																																																																																																																																					
3										ABSORPTION																																																																																																																																																					
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LAGOON										081										SEVERE - SEEPAGE										SAND										201										SAND										UNSUITED																				</																																																																															

SOIL SURVEY INTERPRETATIONS

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

KEYING ONLY
RECORD NO. CONTROL
MLRA STATE

STATE WYOMING RECORD NO. 1001
CLASSIFICATION AND BRIEF SOIL DESCRIPTION
MLRA(S) 1001
KIND OF UNIT SERIES UNIT NAME AMSDEN
DATE 4/74 REVISED UNIT MODIFIER

CLASS 021
DESCR 031
1. ARGILLIC GROSSEUILLE FINE-LOAMY, MIXED
2. 1000' AMBROSE SERIES, ALLUVIAL, DRAINED SOILS FORMED IN GLACIAL TILL OR ALLUVIUM ON STONE SURFACES, SLOPES 3-5% TO 14%
3. FLOODPLAIN, MOSTLY NORTH FACING, ELEVATION IS 7500 TO 8000 FEET, PPT. IS 1.14 TO 1.18 INCHES, MOSTLY ALOE, 1.14 TO 1.18 INCHES
4. 1.14 TO 1.18 INCHES, MOSTLY ALOE, 1.14 TO 1.18 INCHES, THE SURFACE LAYER IS REDDISH GRAY, LOAM ABOUT 12 INCHES THICK, THE SUBSTRATUM IS REDDISH BROWN GRAVELLY CLAY LOAM TO 60 INCHES
5. 1.14 TO 1.18 INCHES, MOSTLY ALOE, 1.14 TO 1.18 INCHES, THE SURFACE LAYER IS REDDISH GRAY, LOAM ABOUT 12 INCHES THICK, THE SUBSTRATUM IS REDDISH BROWN GRAVELLY CLAY LOAM TO 60 INCHES

FOOTNOTE
ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX
					4	10	40	200		
0-12	GR L, L	CL-MH, CL, GC, GM-GC	A-4, A-6	0-15	60-100	65-100	60-90	40-70	15-35	5-15
12-60	GR CL	CL, CG	A-6, A-7	5-20	60-90	55-80	50-75	40-60	25-45	10-20

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
						STEEL	CONCRETE	K	T	
0-2.0	0.6-2.0	15-18	7.4-7.8	---	LOW	HIGH	LOW	24	5	5
2-16	0.6-2.0	16-19	7.4-8.4	---	MODERATE	HIGH	LOW			

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYDRO	POTENTIAL
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)	GRP	FROST ACTION
			> 60					> 60					

FOOTNOTES
SANITARY FACILITIES

KEYING ONLY	FOOTNOTES	SOURCE MATERIAL
FILL 191	SEVERE - SLOPE	20-25% FAIR - SLOPE, FROST ACTION, SHRINK-SWELL
ROAOFILL		25% POOR - SLOPE
SAND 201	SEVERE - SLOPE	UNSUITED
GRAVEL 211	20-25% MODERATE - SLOPE 25% SEVERE - SLOPE	UNSUITED
SOIL 221	SEVERE - SLOPE	POOR - SLOPE, SMALL STONES
TOPSOIL		

FOOTNOTES
WATER MANAGEMENT

KEYING ONLY	FOOTNOTES	WATER MANAGEMENT
PONDRES 231	POOR - SLOPE	SLOPE
POND RESERVOIR AREA		
DIKES 241	SEVERE - SLOPE	LOW STRENGTH, PIPING
EMBANKMENTS DIKES AND LEVES		
PONDAQ 251	SEVERE - SLOPE	NO WATER
EXCAVATED PONDS AQUIFER FED		
DRAIN 261	20-25% MODERATE - SLOPE, SHRINK-SWELL LOW STRENGTH 25% SEVERE - SLOPE	NOT NEEDED
DRAINAGE		
IRRIG 271	SEVERE - SLOPE	
IRRIGATION		
TERRAC 281	SEVERE - SLOPE	SLOPE
TERRACES AND DIVERSIONS		
WATERW 291		
GRASSED WATERWAYS		

FOOTNOTES
REGIONAL INTERPRETATIONS

KEYING ONLY	FOOTNOTES	REGIONAL INTERPRETATIONS
EXCAV 121	SEVERE - SLOPE	
SHALLOW EXCAVATIONS		
DWEL 131	SEVERE - SLOPE	
DWELLINGS WITHOUT BASEMENTS		
DWEL 141	20-25% MODERATE - SLOPE, SHRINK-SWELL LOW STRENGTH 25% SEVERE - SLOPE	
DWELLINGS WITH BASEMENTS		
BLDGS 151	SEVERE - SLOPE	
SMALL COMMERCIAL BUILDINGS		
ROADS 161	SEVERE - SLOPE	
LOCAL ROADS AND STREETS		
REGION 171		
REGION 181		

FOOTNOTES

SOIL SURVEY INTERPRETATIONS

KEYING ONLY

RECORD NO.	CONTROL
WORD NO.	NO.
MLRA 001	
STATE 011	

MLRA(S) 47 KIND OF UNIT VARIANT UNIT NAME AMSDEN, GRAVELLY VARIANT
 STATE WYOMING RECORD NO. AUTHOR(S) HBR DATE 1/76 REVISED UNIT MODIFIER
 CLASSIFICATION AND BRIEF SOIL DESCRIPTION

ARGIC CRYOBOROLL; FINE-LOAMY, MIXED
 AMSDEN, GRAVELLY VARIANT SOILS ARE WELL DRAINED, FORMED IN ALLUVIUM OR GLACIAL TILL ON STEEP MOUNTAINSIDES. SLOPES ARE 20 TO 40 PERCENT, MOSTLY NORTH FACING. ELEVATION IS 7500 TO 8800 FEET. PPT IS 14 TO 18 INCHES. MAST IS ABOUT 42°F., AND THE FFS IS 50 TO 70 DAYS. TYPICALLY THE SURFACE LAYER IS REDDISH GRAY GRAVELLY LOAM ABOUT 12 INCHES THICK. THE SUBSOIL IS REDDISH BROWN GRAVELLY CLAY LOAM ABOUT 32 INCHES THICK. THE SUBSTRATUM IS FREDDISH BROWN GRAVELLY CLAY LOAM TO 60 INCHES.

FOOTNOTE

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX
					4	10	40	200		
PROP 041	0-12 GR-L	CL, GC	A-6	0-15	65-80	65-85	55-75	45-60	15-35	5-15
2	12-60 GR-CL	CL	A-6	0-15	55-80	65-90	60-85	50-70	25-40	10-25
3										
4										
5										
6										

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSION		EROSION FACTORS	WIND EROD. GROUP
						STEEL	CONCRETE	K	T
PROP 051	0.6-2.0	.15-.18	7.4-7.8	---	LOW	HIGH	LOW	24	5
2	0.6-2.0	.16-.19	7.4-8.4	---	MODERATE	HIGH	LOW		
3									
4									
5									
6									

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
			DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
FREQUENCY	DURATION	MONTHS											
NONE			>6			—		>60		—		B	MODERATE

FOOTNOTES

SANITARY FACILITIES

KEYING ONLY

FOOTNOTES

SOURCE MATERIAL

SEPTIC 071	SEPTIC TANK ABSORPTION FIELDS	SEVERE - SLOPE	FILL 191	ROADFILL	20-25% FAIR-SLOPE, FROST ACTIVITY, SHRINK-SWELL
2			2		
3			3		
4			4		
5			5		
LAGOON 081	SEWAGE LAGOONS	SEVERE - SLOPE	SAND 201	SAND	UNSUITED
2			2		
3			3		
4			4		
5			5		
TRENCH 091	SANITARY LANDFILL (TRENCH)	20-25% MODERATE-SLOPE 25+ % SEVERE - SLOPE	GRAVEL 211	GRAVEL	UNSUITED
2			2		
3			3		
4			4		
5			5		
SANARE 101	SANITARY LANDFILL (AREA)	SEVERE - SLOPE	SOIL 221	TOPSOIL	POOR - SLOPE, SMALL STONES
2			2		
3			3		
4			4		
5			5		
COVER 111	DAILY COVER FOR LANDFILL	POOR - SLOPE			
2					
3					
4					
5					

FOOTNOTES

COMMUNITY DEVELOPMENT

KEYING ONLY

FOOTNOTES

WATER MANAGEMENT

EXCAV 121	SHALLOW EXCAVATIONS	SEVERE - SLOPE	DIKES 241	EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH, PIPING
2			2		
3			3		
4			4		
5			5		
DWEL 131	DWELLINGS WITHOUT BASEMENTS	SEVERE - SLOPE	PONDS 251	EXCAVATED PONDS AQUIFER FED	NO WATER
2			2		
3			3		
4			4		
5			5		
DWEL 141	DWELLINGS WITH BASEMENTS	20-25% MODERATE-SLOPE, SHRINK-SWELL LOW STRENGTH 25+ % SEVERE - SLOPE	DRAIN 261	DRAINAGE	NOT NEEDED
2			2		
3			3		
4			4		
5			5		
BLOGS 151	SMALL COMMERCIAL BUILDINGS	SEVERE - SLOPE	IRRIG 271	IRRIGATION	
2			2		
3			3		
4			4		
5			5		
ROADS 161	LOCAL ROADS AND STREETS	SEVERE - SLOPE	TERRAC 281	TERRACES AND DIVERSIONS	SLOPE
2			2		
3			3		
4			4		
5			5		

FOOTNOTES

REGIONAL INTERPRETATIONS

KEYING ONLY

FOOTNOTES

GRASSED WATERWAYS

REGION 171	POTENTIAL SLIDE HAZARD	MEDIUM TO HIGH			
2					
3					
4					
5					
REGION 181					
2					
3					
4					
5					

KEYING ONLY		
RECORD NO.	WORD	NO.
	CAMPS	301
		2
		3
		4
		5
	PICNIC	311
		2
		3
		4
		5

UNIT NAME: **AMSDEN**

(2)

UNIT MODIFIER:

FOOTNOTE

SEVERE - SLOPE

CAMP AREAS

PICNIC AREAS

RECREATION

KEYING ONLY

PLAYGRD 321

2

3

4

5

PATHS 331

2

3

4

5

PLAYGROUNDS

PATHS AND TRAILS

FOOTNOTE

SEVERE - SLOPE

20-25% MODERATE - SLOPE
25%+ SEVERE - SLOPE

CROPHD	451
	2
	3
CROPS	341
	2
	3
	4
	5
	6
	7
	8
	9
	351
	2
	3

FOOTNOTE

CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-
DETERMINING
PHASE

CAPABILITY

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

FOOTNOTE

WOODLAND SUITABILITY

CLASS-
DETERMINING
PHASE

ORD
SYM

EROSION
HAZARD

EQUIP.
LIMIT

SEEDLING
MORT'Y.

WINDTH.
HAZARD

PLANT
COMPET.

POTENTIAL PRODUCTIVITY

IMPORTANT TREES

SITE
INDEX

TREES TO PLANT

NONE

WOODS	361
	2
	3
	4
	5
	6
	7
	8
	9
	371
	2
	3
	4
	5
	6

FOOTNOTE

WIND BREAKS

CLASS-DETERMINING PHASE

SPECIES

HT

SPECIES

HT

SPECIES

HT

SPECIES

HT

WINDBK 381

ALL

RUSSIAN OLIVE

15

SIBERIAN PEATREE

10

COTTONWOOD

20

QUAKING ASPEN

15

BOXELDER

15

PONDEROSA PINE

7

BLUE SPRUCE

15

SERVICEBERRY

10

FOOTNOTE

WILDLIFE HABITAT SUITABILITY

CLASS-
DETERMINING
PHASE

GRAIN &
SEED

GRASS &
LEGUME

WILD
HERB.

HARDWD
TREES

CONIFER
PLANTS

SHRUBS

WETLAND
PLANTS

SHALLOW
WATER

OPENLAND
WILDLIFE

WOODLAND
WILDLIFE

WETLAND
WILDLIFE

RANGELAND
WILDLIFE

20-30%

POOR

POOR

GOOD

—

—

GOOD

V. POOR

V. POOR

POOR

—

V. POOR

GOOD

30-40%

V. POOR

V. POOR

GOOD

—

—

GOOD

V. POOR

V. POOR

POOR

—

V. POOR

GOOD

WILDLF	391
	2
	3
	4
	5
	6

FOOTNOTE

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE

PHASE 401

Ly 15-19" PZ.

COMMON PLANT NAME

PLANT
SYMBOL
(NLSN)

ALL

PLANT 411

ANTELOPE BUTTERBRUSH

PUTR 2

10

BIG SAGEBRUSH

ARTR 2

10

SANBY BLUEGRASS

POCA

10

COLUMBIA NEEDLEGRASS

STCO 3

5

IDAHO FESCUE

FEID

20

MOUNTAIN BROMEGRASS

BRCA 5

5

SPIKE FESCUE

HEKI

10

THICKSKIN WHEATGRASS

AGDA

15

UUUU

15

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):

FAVORABLE YEARS

2400

NORMAL YEARS

2000

UNFAVORABLE YEARS

1400

SYM.

FOOTNOTES

NOTES 441

2

3

4

5

6

7

RECORD NO.	CONTROL	
	WORD	NO.
	MLRA	001
	STATE	011

SOLOLLIC CALCICORTHIDY, LOAMY-SKELETAL, MIXED.
THE BROWNSTON SERIES ARE WELL BLENDED SOILS FORMED IN 3500 Y. ALLUVIUM ON ELYTING SLOPING TO STEEP ALLUVIAL FANS AND
TERRACES. SLOPES ARE 3 TO 20 PERCENT. ELEVATION IS 400 TO 7500 FEET. PPT IS 10 TO 14 INCHES. MAIST IS ABOUT 450 F.
AND THE FLS IS 60 TO 90 DAYS. TYPICALLY THE SURFACE LAYER IS BROWN OR BROWNISH SANDY LOAM ABOUT 10 INCHES THICK. THE
SUBSOIL AND SUBSTRATUM ARE VERY PALE BROWN VERY GRAVELLY SANDY LOAM 20 TO 40 INCHES.

[illegible]

FOOTNOTES	SANITARY FACILITIES	KEYING ONLY	FOOTNOTES	SOURCE MATERIAL
3 - 6		FILE 191		

DAILY COVER FOR LANDFILL	3-15% POOR - SMALL STONES	PONDRES	231	FOOTNOTES	WATER MANAGEMENT		
	15+ % POOR - SLOPE, SMALL STONES		2			POND RESERVOIR	SLOPE, SEEPAGE
			3				
			4				

DWELLINGS WITHOUT BASEMENTS	3-8 % MODERATE - LARGE STONES	PONDAQ	251	EXCAVATED PONDS AQUIFER FED	NO WATER
	8-15 % MODERATE - SLOPE, LARGE STONES		2		
	15+ % SEVERE - SLOPE		3		
			4		
			5		

SMALL COMMERCIAL BUILDINGS	3-7% MODERATE SLOPE, LARGE STONES	IRRIG	271	IRRIGATION	SLOPE, FAST INTAKE, SEEPAGE
	4-8% MODERATE SLOPE, LARGE STONES		2		
	8+% SEVERE SLOPE		3		
			4		
			5		
LOCAL	3-8% SLIGHT	TERRAC	281		SLOPE, LARGE STONES

[illegible]

KEYING ONLY			UNIT NAME: <u>BROWNSTO</u>		RECREATION		FOOTNOTE	
RECORD NO.	CONTROL WORD	NO.	UNIT MODIFIER:	KEYING ONLY	PLAYGO	KEYING ONLY	PLAYGO	FOOTNOTE
	CAMPS	301						3-8% MODERATE-SMALL STONES
		2						8-15% MODERATE-SLOPE, SMALL STONES
		3						15+% SEVERE-SLOPE
		4						
		5						
	PICNIC	311						3-8% MODERATE-SMALL STONES
		2						8-15% MODERATE-SLOPE, SMALL STONES
		3						15+% SEVERE-SLOPE
		4						
		5						
		321						3-6% MODERATE-SLOPE, SMALL STONES, LARGE STONES
		2						6+% SEVERE-SLOPE
		3						
		4						
		5						
		331						3-15% MODERATE-SMALL STONES
		2						15-25% MODERATE-SLOPE, SMALL STONES
		3						25+% SEVERE-SLOPE
		4						
		5						
		341						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		351						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		361						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		371						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		381						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		391						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		401						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		411						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		421						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		431						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		441						
		2						
		3						
		4						
		5						
		6						
		7						

KEYING ONLY

[illegible]

FOOTNOTES

SOIL SURVEY INTERPRETATIONS

KEYING ONLY
RECORD NO. CONTROL
WORD NO.
MLRA 001
STATE 011

SOIL SURVEY INTERPRETATIONS

MLRA(S) 34, 47
STATE WYOMING
RECORD NO. 1
AUTHOR(S) HBR
DATE 7/74
KIND OF UNIT SERIES
UNIT NAME CHEADLE
CLASSIFICATION AND BRIEF SOIL DESCRIPTION
REVISED
UNIT MODIFIER

CLASS 021
DESCR 031
2
3
4
5

LITHIC, PYROBOLIC; LOAMY-SKELETAL, MIXED
THE CHEADLE SERIES ARE WELL DRAINED, SHALLOW SOILS FORMED IN RESIDUAL FROM SANDSTONE ON GENTLY SLOPING TO STEEP RIDGETOPS AND SIDESLOPES.
SLOPES ARE 3 TO 50 PERCENT. ELEVATION IS 7500 TO 9400 FEET. PPT IS 13 TO 16 INCHES. MAINT IS ABOUT 43°F., AND FFS IS 60 TO 90 DAYS.
TYPICALLY, THE PROFILE IS GRAYISH BROWN AND PALE BROWN VERY CHANNERY SANDY LOAM ABOUT 18 INCHES THICK UNDERLAIN BY SANDSTONE.

FOOTNOTE
ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQ. LIMIT	PLAS. INDEX
					4	10	40	200		
PRDP 041	0-18 CNV-SL	SM, SM-SC	A-1, A-2	0	60-75	30-50	20-35	15-20	NP-25	NP-5
2	18 UWD									
3										
4										
5										
6										

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
						STEEL	CONCRETE	K	T	
PRDP 051	2.0 - 6.0	.07 - .09	7.9 - 8.4	---	LOW	MODERATE	LOW	15	2	8
SAME DEPTH AS ABOVE										
2										
3										
4										
5										
6										

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD. GRP.	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
PRDP 061	NONE		> 6			---		10-20	RIPPABLE	---		D	LOW

FOOTNOTES
SANITARY FACILITIES

KEYING ONLY	FOOTNOTES	SOURCE MATERIAL
SEPTIC 071	2 SEPTIC TANK ABSORPTION FIELDS	3-15% SEVERE - DEPTH TO ROCK 15+ % SEVERE - SLOPE, DEPTH TO ROCK
LAGOON 081	2 SEWAGE LAGOONS	3-7% SEVERE - DEPTH TO ROCK 7+ % SEVERE - SLOPE, DEPTH TO ROCK
TRENCH 091	2 SANITARY LANDFILL (TRENCH)	3-25% SEVERE - DEPTH TO ROCK 25+ % SEVERE - SLOPE, DEPTH TO ROCK
SANARE 101	2 SANITARY LANDFILL (AREA)	3-8% SLIGHT 8-15% MODERATE - SLOPE 15+ % SEVERE - SLOPE
CDVER 111	2 DAILY COVER FOR LANDFILL	3-15% POOR - DEPTH TO ROCK 15+ % POOR - SLOPE, DEPTH TO ROCK

FOOTNOTES
COMMUNITY DEVELOPMENT

KEYING ONLY	FOOTNOTES	WATER MANAGEMENT
EXCAV 121	2 SHALLOW EXCAVATIONS	3-15% SEVERE - DEPTH TO ROCK 15+ % SEVERE - SLOPE, DEPTH TO ROCK
DWEL 131	2 DWELLINGS WITHOUT BASEMENTS	3-15% SEVERE - DEPTH TO ROCK 15+ % SEVERE - SLOPE, DEPTH TO ROCK
DWEL 141	2 DWELLINGS WITH BASEMENTS	3-25% SEVERE - DEPTH TO ROCK 25+ % SEVERE - SLOPE, DEPTH TO ROCK
BLDGS 151	2 SMALL COMMERCIAL BUILDINGS	3-8% SEVERE - DEPTH TO ROCK 8+ % SEVERE - SLOPE, DEPTH TO ROCK
ROADS 161	2 LOCAL ROADS AND STREETS	3-15% SEVERE - DEPTH TO ROCK 15+ % SEVERE - SLOPE, DEPTH TO ROCK

FOOTNOTES
REGIONAL INTERPRETATIONS

KEYING ONLY	FOOTNOTES	GRASSED WATERWAYS
REGION 171	2 POTENTIAL SLIDE HAZARD	
REGION 181	2	
	3	
	4	
	5	

KEYING ONLY		
RECORD NO.	CONTROL	
	WORD	NO.
	MLRA	001
	STATE	011
	CLASS	021
	DESC	031
		2
		3
		4
		5

USTIC TORRIORTHENT; LOAMY-SKELETAL, MIXED (CALCAREOUS) FRIGID, SHALLOW
THE CRAGSEN SERIES ARE WELL DRAINED, SHALLOW SOILS FORMED IN GRAVELLY ALLUVIUM ON MODERATELY STEEP AND STEEP RIDGES AND SIDESLOPES.
SLOPES ARE 10 TO 40 PERCENT. ELEVATION IS 7000 TO 7500 FEET. PPT IS 10 TO 14 INCHES. WAST IS ABOUT 45°F., AND THE FFS IS 60 TO 90
DAYS. TYPICALLY, THE PROFILE IS BROWN GRAVELLY LOAM ABOUT 16 INCHES THICK, UNDERLAIN BY CONGLOMERATE BEDROCK, SANDSTONE, OR SHALE.

ESTIMATED SOIL PROPERTIES

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
			DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
FREQUENCY	DURATION	MONTHS											
NONE			>6			—		10-20	RIPPABLE	—		D	LOW

LOCAL ROADS AND STREETS	10-15% MODERATE-SLOPE, DEPTH TO ROCK	TERRAC	281	TERRACES AND DIVERSIONS	SLOPE, DEPTH TO ROCK
	15+%/ SEVERE-SLOPE		2		
			3		
			4		
			5		

[illegible]

KEYING ONLY

RECORD NO.

CONTROL WORD

NO.

UNIT NAME: CragoSEN

UNIT MODIFIER:

FOOTNOTE

10-15% MODERATE - SLOPE, SMALL STONES

15+% SEVERE - SLOPE

RECREATION

KEYING ONLY

PLAYGO 321

2

3

4

5

FOOTNOTE

SEVERE - SLOPE, DEPTH TO ROCK

CAMP AREAS

PICNIC AREAS

10-15% MODERATE - SLOPE, SMALL STONES

15+% SEVERE - SLOPE

PLAYGROUNDS

PATHS AND TRAILS

10-15% MODERATE - SLOPE, SMALL STONES

15-25% MODERATE - SLOPE, SMALL STONES

25+% SEVERE - SLOPE

FOOTNOTE

CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS- DETERMINING PHASE

CAPABILITY

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

NIRR

IRR.

CROPHD 451

2

3

CROPS 341

2

3

4

5

6

7

8

9

351

2

3

FOOTNOTE

WOODLAND SUITABILITY

CLASS- DETERMINING PHASE

ORD SYM

EROSION HAZARD

EQUIP. LIMIT

SEEDLING MORTY.

WINOTH. HAZARD

PLANT COMPET.

POTENTIAL PRODUCTIVITY

IMPORTANT TREES

SITE INDEX

TREES TO PLANT

WOODS 361

2

3

4

5

6

7

8

9

371

2

3

4

5

6

FOOTNOTE

WIND BREAKS

CLASS- DETERMINING PHASE

SPECIES

HT

SPECIES

HT

SPECIES

HT

SPECIES

HT

WINDBK 381

2

3

4

5

6

FOOTNOTE

WILDLIFE HABITAT SUITABILITY

CLASS- DETERMINING PHASE

POTENTIAL FOR HABITAT ELEMENTS

POTENTIAL AS HABITAT FOR:

GRAIN & SEED

GRASS & LEGUME

WILD HERB.

HARDWD TREES

CONIFER PLANTS

SHRUBS

WETLAND PLANTS

SHALLOW WATER

OPENLAND WILDLIFE

WOODLAND WILDLIFE

WETLAND WILDLIFE

RANGELAND WILDLIFE

WILDLF 391

2

3

4

5

6

FOOTNOTE

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE

Sw. Ly 10-14" P.Z.

COMMON PLANT NAME

PLANT SYMBOL (NLSFN)

ALL

PHASE 401

2

PLANT 411

2

3

4

5

6

7

8

9

421

2

3

4

5

6

PRODUC 431

2

3

POTENTIAL PRODUCTION (LBS./AC. DRY WT):

FAVORABLE YEARS

NORMAL YEARS

UNFAVORABLE YEARS

1200

900

700

SYM.

NOTES 441

2

3

4

5

6

7

FOOTNOTES

* NOT USUALLY UTILIZED BY LIVESTOCK

SOIL SURVEY INTERPRETATIONS

KEYING ONLY		
RECORD NO.	CDTROL	
MLRA	001	
STATE	011	
CLASS	021	
DESCR	031	

MLRA(S)	34	KIND OF UNIT	SERIES	UNIT NAME	FIVECH
STATE	WYOMING	RECORD NO.		AUTHOR(S)	HRR
CLASSIFICATION AND BRIEF SOIL DESCRIPTION		DATE	4/74	REVISED	
<p>PELLOIC CALCICORTHIDY COARSE-LOAMY, MIXED</p> <p>THE FIVECH SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON GENTLY AND MODERATELY SLOPING ALLUVIAL FANS AND TERRACES. SLOPES ARE 3 TO 10 PERCENT. ELEVATION IS 6400 TO 7500 FEET. PPT IS 10 TO 14 INCHES. MAINT IS ABOUT 45°F. AND THE FERT IS 6.0 TO 9.0 DAYS. TYPICALLY, THE SURFACE LAYER IS REDDISH SANDY LOAM ABOUT 11 INCHES THICK. THE SUBSOIL IS LIGHT BROWN AND PINK STRONGLY ALKALINE SANDY LOAM ABOUT 19 INCHES THICK. THE SUBSTRATUM IS BROWN SANDY LOAM TO 60 INCHES.</p>					

			ESTIMATED SOIL PROPERTIES										
			FDDTNDTE										
			DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHD	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLAS- TICITY INDEX
								4	10	40	200		
PRDP	041												
	2		0-60 SL	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	2-2-2-2	0-5	85-100	75-100	45-70	20-40	10-30	NP-10	
	3												
	4												
	5												
	6												

			DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SDIL REACTION (pH)	SALINITY (MMHDS/CM)	SHRINK-SWELL PDENTIAL	CORROSIIVITY		EROSIÓN FACTORS		WIND EROD. GROUP
	PRDP	051							STEEL	CONCRETE	K	T	
			SAME DEPTH AS ABOVE	0.6-2.0	.06-.12	8.5-9.0	1-16	LOW	HIGH	LOW	20	5	3

PRDP	061	FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
		FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
	2	NONE			26					260				B	LOW

FDDTNDTE		SANITARY FACILITIES				KEYING ONLY		FDDTNDTE		SOURCE MATERIAL	
SEPTIC	071	SEPTIC TANK ABSORPTION FIELDS				FILL	191	ROADFILL			
	2		3-8% SLIGHT				2			GOOD	
	3		8-10% MODERATE - SLOPE				3				
	4						4				
	5						5				
	2	LAGOON				SAND	201			POOR - EXCESS FINES	
	3		3-7% MODERATE - SLOPE, SEEPAGE				2				
	4		7-10% SEVERE - SLOPE				3				
	5						4				
	6						5				
	2	TRENCH				GRAVEL	211			UNSUITED	
	3		SEVERE - SEEPAGE				2				
	4						3				
	5						4				
	6						5				
	2	SANARE				SOIL	221			POOR - EXCESS LIME	
	3		3-8% SLIGHT				2				
	4		8-10% MODERATE - SLOPE				3				
	5						4				
	6						5				
	2	COVER									
	3		3-8% SLIGHT								
	4		8-10% MODERATE - SLOPE								
	5										

FDDTNDTE		COMMUNITY DEVELOPMENT				FOOTNOTES		WATER MANAGEMENT	
EXCAV	121	SHALLOW EXCAVATIONS				PONDRES	231	POND RESERVOIR AREA	
	2		3-8% SLIGHT				2		SEEPAGE
	3		8-10% MODERATE - SLOPE				3		
	4						4		
	5						5		
	2	DWEL				PONDAQ	251		NO WATER
	3		0-8% SLIGHT				2		
	4		8-10% MODERATE - SLOPE				3		
	5						4		
	6						5		
	2	DWEL				DRAIN	261		NOT NEEDED
	3		SLIGHT				2		
	4						3		
	5						4		
	6						5		
	2	BLDGS				IRRIG	271		EXCESS LIME, SLOPE
	3		3-4% SLIGHT				2		
	4		4-8% MODERATE - SLOPE				3		
	5		8-10% SEVERE - SLOPE				4		
	6						5		
	2	RDADS				TERRAC	281		ERODES EASILY, PIPING, SLOPE
	3		3-8% SLIGHT				2		
	4		8-10% MODERATE - SLOPE				3		
	5						4		
	6						5		

FDDTNDTE		REGIONAL INTERPRETATIONS				WATERWAY			
REGION	171						291		
	2						2		GRASSED WATERWAYS
	3						3		
	4						4		
	5						5		
	2	REGION							
	3								
	4								
	5								

FOOTNOTE CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

FOOTNOTE WOODLAND SUITABILITY

FOOTNOTE WIND BREAKS

FOOTNOTE WILDLIFE HABITAT SUITABILITY

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

POTENTIAL PRODUCTION (LBS./AC. DRY WT):
 FAVORABLE YEARS
 NORMAL YEARS
 UNFAVORABLE YEARS

FOOTNOTES

NOTES		SYM.	FOOTNOTES	
441				
2				
3				
4				
5				
6				
7				

SOIL SURVEY INTERPRETATIONS

KEYING ONLY	
RECORD NO.	CONTROL NO.
MLRA	001
STATE	011

MLRA(S) <u>34</u>	KIND OF UNIT <u>SERIES</u>	UNIT NAME <u>GOSLIN</u>
STATE <u>WYOMING</u>	RECORD NO. <u> </u>	AUTHOR(S) <u>HER</u>
DATE <u>4/74</u>	REVISED <u> </u>	UNIT MODIFIER <u> </u>

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

CLASS	021	<u>USTIC TERRICORTHENT, COARSE-LOAMY, MIXED (CALCAREOUS), FRIGID</u>
DESCR	031	<u>THE GOSLIN SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON GENTLY SLOPING TO MODERATELY STEEP ALLUVIAL FANS AND TERRACES. SLOPES ARE 3 TO 20 PERCENT. ELEVATION IS 6300 TO 7500 FEET. PPT IS 11.0 TO 14 INCHES. MAIST IS ABOUT 45°F. AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS BROWN AND REDDISH BROWN FINE SANDY LOAM 60 INCHES OR MORE THICK</u>

FOOTNOTE

ESTIMATED SOIL PROPERTIES

PRDP	041	DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX
							4	10	40	200		
		0-60	ESL, SL	SM, SM-SC, SC	A-2, A-4	0-5	95-100	75-100	45-70	20-40	15-30	NP-10

PROP	051	DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSION		EROSION FACTORS	WIND EROD. GROUP	
								STEEL	CONCRETE			
		2.0-6.0	2.0-6.0	12-16	8.0-8.8	0-4	LOW	HIGH	LOW	24	5	3

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
RARE	V. BRIEF	APP-SEP	>6					>60				B	LOW

FOOTNOTES		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL	
SEPTIC	071	3-8%: SLIGHT		FILL	191	3-15%: GOOD			
	2	8-15%: MODERATE - SLOPE			2	15+ %: FAIR - SLOPE			
	3	15+ %: SEVERE - SLOPE			3				
	4				4				
	5				5				
LAGOON	081	3-7%: SEVERE - SEEPAGE		SAND	201	POOR - EXCESS FINES			
	2	7+ %: SEVERE - SLOPE, SEEPAGE			2				
	3				3				
	4				4				
	5				5				
TRENCH	091	SEVERE - SEEPAGE		GRAVEL	211	UNSUITED			
	2				2				
	3				3				
	4				4				
	5				5				
SANARE	101	3-15%: SEVERE - SEEPAGE		SOIL	221	3-8%: GOOD			
	2	15+ %: SEVERE - SLOPE, SEEPAGE			2	8-15%: FAIR - SLOPE			
	3				3	15+ %: POOR - SLOPE			
	4				4				
	5				5				

FOOTNOTES		COMMUNITY DEVELOPMENT		FOOTNOTES		WATER MANAGEMENT	
COVER	111	3-8%: SLIGHT		PONDRES	231	SEEPAGE	
	2	8-15%: MODERATE - SLOPE			2		
	3	15+ %: SEVERE - SLOPE			3		
	4				4		
	5				5		

FOOTNOTES		COMMUNITY DEVELOPMENT		FOOTNOTES		WATER MANAGEMENT	
EXCAV	121	3-8%: MODERATE - FLOODING		DIKES	241	LOW STRENGTH, PIPING	
	2	8-15%: MODERATE - SLOPE, FLOODING			2		
	3	15+ %: SEVERE - SLOPE			3		
	4				4		
	5				5		
DWEL	131	3-8%: SLIGHT		PONDAQ	251	NO WATER	
	2	8-15%: MODERATE - SLOPE			2		
	3	15+ %: SEVERE - SLOPE			3		
	4				4		
	5				5		
DWEL	141	3-15%: SLIGHT		DRAIN	261	NOT NEEDED	
	2	15-25%: MODERATE - SLOPE			2		
	3				3		
	4				4		
	5				5		
BLOGS	151	3-4%: SLIGHT		IRRIG	271	SLOPE	
	2	4-8%: MODERATE - SLOPE			2		
	3	8+ %: SEVERE - SLOPE			3		
	4				4		
	5				5		
ROADS	161	3-8%: SLIGHT		TERRAC	281	ERODES EASILY, PIPING, SLOPE	
	2	8-15%: MODERATE - SLOPE			2		
	3	15+ %: SEVERE - SLOPE			3		
	4				4		
	5				5		

FOOTNOTES		REGIONAL INTERPRETATIONS		FOOTNOTES		WATER MANAGEMENT	
REGION	171			WATERW	291	GRASSED WATERWAYS	
	2				2		
	3				3		
	4				4		
	5				5		
REGION	181						
	2						
	3						
	4						

KEYING ONLY			UNIT NAME: GOSLIN		RECREATION		
RECORD NO.	CONTROL WORD	NO.	UNIT MODIFIER:	FOOTNOTE	KEYING ONLY	FOOTNOTE	
CAMPS	301	1		3-8% SLIGHT	PLAYGRD	321	3-6% MODERATE - SLOPE
		2		8-15% MODERATE - SLOPE		2	6+ % SEVERE - SLOPE
		3		15+ % SEVERE - SLOPE		3	
		4				4	
		5				5	
PICNIC	311	1		3-8% SLIGHT	PATHS	331	3-15% SLIGHT
		2		8-15% MODERATE - SLOPE		2	15-20% MODERATE - SLOPE
		3		15+ % SEVERE - SLOPE		3	
		4				4	
		5				5	
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)							
CROPHD	451	1					
		2					
		3					
CROPS	341	1		3-6%			
		2		6-10%			
		3		10-20%			
		4					
		5					
		6					
		7					
		8					
		9					
		351					
		2					
		3					
WOODLAND SUITABILITY							
WOODS	361	1					
		2					
		3					
		4					
		5					
		6					
		7					
		8					
		9					
		371					
		2					
		3					
		4					
		5					
		6					
WIND BREAKS							
WINDBK	381	1					
		2					
		3					
		4					
		5					
		6					
WILDLIFE HABITAT SUITABILITY							
WILDLF	391	1					
		2					
		3					
		4					
		5					
		6					
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)							
PHASE	401	1					
		2					
PLANT	411	1					
		2					
		3					
		4					
		5					
		6					
		7					
		8					
		9					
		421					
		2					
		3					
		4					
		5					
		6					
		7					
PRODUC	431	1					
		2					
		3					
NOTES	441	1					
		2					
		3					
		4					
		5					
		6					
		7					

SOIL SURVEY INTERPRETATIONS

KEYING ONLY		RECORD CONTROL	
NO.	WORD	NO.	
MLRA	001		
STATE	011		
CLASS	021		
DESCR	031		
PROP	041		
PRDP	051		
PRDP	061		
SEPTIC	071		
LAGOON	081		
TRENCH	091		
SANARE	101		
COVER	111		
EXCAV	121		
DWEL	131		
DWEL	141		
BLDGS	151		
RDADS	161		
REGION	171		
REGION	181		

MLRA(S) 34, 47 KIND OF UNIT SERIES UNIT NAME JENKINSON

STATE WYOMING RECORD NO. AUTHOR(S) HJB DATE 4/74 REVISED UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

LITHIC CRYOBOROLL; LOAMY, MIXED

THE JENKINSON SERIES ARE WELL DRAINED, SHALLOW SOILS FORMED IN RESIDUUM FROM SANDSTONE AND SHALE ON GENTLY SLOPING TO MODERATELY STEEP UPLANDS. SLOPES ARE 3 TO 15 PERCENT. ELEVATION IS 7700 TO 8500 FEET. PPT IS 13 TO 16 INCHES. MAST IS ABOUT 42°F., AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS GRAYISH BROWN AND BROWN LOAM ABOUT 14 INCHES THICK UNDER-LAIN BY SANDSTONE.

FOOTNOTE

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX
					4	10	40	200		
0-14	L	ML-CL, ML, CL	A-4	0-5	80-100	75-95	65-90	50-70	15-35	5-10
14+	UWB									

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
						STEEL	CONCRETE	K	T	
0-6	2.0	.14-.17	7.9-8.4		LOW	MODERATE	LOW	.2	1	5
SAME DEPTH AS ABOVE										

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
NONE			26					10-20	RIPPABLE			D	MODERATE

FOOTNOTES 7

SANITARY FACILITIES

KEYING ONLY

FOOTNOTES 7

SOURCE MATERIAL

SEPTIC	LAGOON	TRENCH	SANARE	COVER	EXCAV	DWEL	DWEL	BLDGS	RDADS	REGION
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5

SEPTIC TANK ABSORPTION FIELDS

3-15% SEVERE - DEPTH TO ROCK

15+ % SEVERE - SLOPE, DEPTH TO ROCK

SEWAGE LAGOONS

3-7% SEVERE - DEPTH TO ROCK

7+ % SEVERE - SLOPE, DEPTH TO ROCK

SANITARY LANDFILL (TRENCH)

SEVERE - DEPTH TO ROCK

SANITARY LANDFILL (AREA)

3-8% SLIGHT

8-15% MODERATE - SLOPE

15+ % SEVERE - SLOPE

DAILY COVER FOR LANDFILL

3-15% POOR - THIN LAYER

15+ %, POOR - SLOPE, THIN LAYER

SHALLOW EXCAVATIONS

3-8% MODERATE - DEPTH TO ROCK

8-15% MODERATE - SLOPE, DEPTH TO ROCK

DWELLINGS WITHOUT BASEMENTS

3-8% MODERATE - DEPTH TO ROCK

8-15% MODERATE - SLOPE, DEPTH TO ROCK

DWELLINGS WITH BASEMENTS

MODERATE - DEPTH TO ROCK

SMALL COMMERCIAL BUILDINGS

3-4% MODERATE - DEPTH TO ROCK

4-8% MODERATE - DEPTH TO ROCK, SLOPE

8-15% SEVERE - SLOPE

LOCAL ROADS AND STREETS

3-8% MODERATE - DEPTH TO ROCK, FROST ACTION

8-15% MODERATE - SLOPE, DEPTH TO ROCK, FROST ACTION

POTENTIAL SLOPE HAZARD

MEDIUM

ROADFILL

POOR - THIN LAYER

SAND

UNSUITED

GRAVEL

UNSUITED

TOPSOIL

FAIR - THIN LAYER, AREA SECT. 21

FOOTNOTES 7

WATER MANAGEMENT

POND RESERVOIR AREA

SLOPE, DEPTH TO ROCK

EMBANKMENTS DIKES AND LEVEES

THIN LAYER, PIPING, LOW STRENGTH

EXCAVATED PONDS AQUIFER FED

NO WATER

DRAINAGE

NOT NEEDED

IRRIGATION

TERRACES AND DIVERSIONS

SLOPE, DEPTH TO ROCK

GRASSED WATERWAYS

KEYING ONLY			UNIT NAME: JENKINSON		RECREATION	
RECORD NO.	CONTROL	NO.	UNIT MODIFIER:	FOOTNOTE	PLAYGRD	FOOTNOTE
CAMPS	301	1		2-4%: SLIGHT	321	2-4%: SEVERE - DEPTH TO ROCK
		2		4-6%: MODERATE - SLOPE		4-6%: SEVERE - SLOPE, DEPTH TO ROCK
		3				
		4				
		5				
PICNIC	311	1		2-8%: SLIGHT	331	SLIGHT
		2		8-15%: MODERATE - SLOPE		
		3				
		4				
		5				
CROPHD	451	1				
		2				
		3				
CROPS	341	1				
		2				
		3				
		4				
		5				
		6				
		7				
		8				
		9				
		351				
		2				
		3				
WOODS	361	1				
		2				
		3				
		4				
		5				
		6				
		7				
		8				
		9				
		371				
		2				
		3				
		4				
		5				
		6				
WINDBK	381	1				
		2				
		3				
		4				
		5				
		6				
WILDLF	391	1				
		2				
		3				
		4				
		5				
		6				
PHASE	401	1				
		2				
PLANT	411	1				
		2				
		3				
		4				
		5				
		6				
		7				
		8				
		9				
		421				
		2				
		3				
		4				
		5				
		6				
PRODUC	431	1				
		2				
		3				
NOTES	441	1				
		2				
		3				
		4				
		5				
		6				
		7				

SOIL SURVEY INTERPRETATIONS

KEYING ONLY			RECORD NO.		CONTROL	
RECORD NO.	WORD	NO.	MLRA	001	STATE	011
			MLRA(S) <u>47</u>	KIND OF UNIT <u></u>	UNIT NAME <u>LEAVITT</u>	
			STATE <u>WYOMING</u>	RECORD NO. <u></u>	AUTHOR(S) <u>HBR</u>	DATE <u>4/74</u>
			CLASSIFICATION AND BRIEF SOIL DESCRIPTION			
CLASS	021	ARCTIC CRYOBOROLL; FINE-LOAMY, MIXED				
OESCR	031	THE LEAVITT SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON GENTLY SLOPING AND SLOPING ALLUVIAL FANS AND STORSTONES. SLOPES ARE 3 TO 10 PERCENT. ELEVATION IS 7700 TO 8500 FEET. PPT IS 13 TO 16 INCHES. MAST IS ABOUT 42 OF., AND THE PFS IS 60 TO 90 DAYS. TYPICAL Y, THE SURFACE LAYER IS GRAYISH BROWN LOAM ABOUT 6 INCHES THICK. THE SUBSOIL IS BROWN CLAY LOAM ABOUT 32 INCHES THICK. THE SUBSTRATUM IS GRAYISH BROWN CLAY LOAM TO 60 INCHES.				
			FOOTNOTE			
			ESTIMATED SOIL PROPERTIES			
			DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO
PROP	041	0-60	CL	CL	A-6	0-5
			PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE			
			4 10 40 200			
			25-100 75-100 70-100 55-80			
			LIQUID LIMIT 25-40			
			PLASTICITY INDEX 11-20			
			DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)
PROP	051	06-20	.17-.20	7.4-8.4	2-8	MODERATE
			SALINITY (MMHOS/CM)			
			SHRINK-SWELL POTENTIAL			
			CORROSIVITY			
			EROSION FACTORS			
			WIND EROD. GROUP			
			FLOODING			
			HIGH WATER TABLE			
			CEMENTED PAN			
			BEDROCK			
			SUBSIDIENCE			
			HYD GRP			
			POTENTIAL FROST ACTION			
PROP	061	NONE				
			FOOTNOTES			
			SANITARY FACILITIES			
			KEYING ONLY			
			FOOTNOTES			
			SOURCE MATERIAL			
SEPTIC	071	3-8% MODERATE - PERCS SLOWLY	FILL	191	FAIR - FROST ACTION, SHRINK-SWELL, LOW STRENGTH	
			ROADFILL			
			SAND			
			GRAVEL			
			TOPSOIL			
			WATER MANAGEMENT			
			COMMUNITY DEVELOPMENT			
			POND RESERVOIR AREA			
			EMBANKMENTS			
			EXCAVATED PONDS			
			DRAINAGE			
			IRRIGATION			
			TERRACES AND DIVERSIONS			
			GRASSED WATERWAYS			
			REGIONAL INTERPRETATIONS			
			POTENTIAL			
			SLIDE			
			HAZARD			
			MEDIUM TO HIGH			

[illegible]

KEYING ONLY		
RECORD NO.	CONTROL	
	WORD	NO.
	MLRA	001
	STATE	011
	CLASS	021
	DESCR	031
		2
		3
		4

MLRA(S) 47 KIND OF UNIT SERIES UNIT NAME LIBEG
STATE WYOMING RECORD NO. AUTHOR(S) HBR DATE 4/74 REVISED UNIT MODIFIER
CLASSIFICATION AND BRIEF SOIL DESCRIPTION
ARGIC CRYOBOROLL; LOAMY-SKELETAL, MIXED
THE LIBEG SERIES ARE WELL DRAINED SOILS FORMED GLACIAL TILL OR ALLUVIUM FROM GLACIAL TILL ON STEEP SIDESLOPES. SLOPES ARE 20 TO 40 PERCENT,
MOSTLY NORTH FACING. ELEVATION IS 7500 TO 8800 FEET. PPT IS 14 TO 18 INCHES. MAST IS ABOUT 42 OF., AND THE FFS IS 50 TO 70 DAYS. TYPICALLY,
THE SURFACE LAYER IS REDDISH BROWN LOAM ABOUT 12 INCHES THICK. THE SUBSOIL IS REDDISH BROWN GOBBLY CLAY LOAM TO 60 INCHES.

[illegible][illegible]

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYO GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
NONE			>6			—		>60		—		S	MODERATE

FOOTNOTES		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL	
SEPTIC TANK ABSORPTION FIELDS		SEVERE - SLOPE, LARGE STONES	FILL	19	ROAOFILL		20-25%: FAIR - SLOPE, FROST ACT'V		
				2			SHRINK-SWELL		
				3			25+ %: POOR - SLOPE		
				4					
				5					
SEWAGE LAGOONS		SEVERE SLOPE, LARGE STONES	SAND	20	SAND		UNSUITED		
				2					
				3					
				4					
				5					
SANITARY LANDFILL (TRENCH)		20-25% MODERATE - SLOPE	GRAVEL	21	GRAVEL		POOR - EXCESS FINES		
		25+ %: SEVERE - SLOPE		2					
				3					
				4					
				5					
SANITARY LANDFILL (AREA)		SEVERE - SLOPE	SOIL	22	TOPSOIL		POOR - SLOPE, SMALL STONES, LARGE STONES		
				2					
				3					
				4					
				5					
DAILY COVER FOR LANDFILL		POOR - SLOPE, SMALL STONES, LARGE STONES			FOOTNOTES		WATER MANAGEMENT		
			POND	23			SLOPE		
				2					
				2					
				2					

FOOTNOTES	COMMUNITY DEVELOPMENT			RESERVOIR AREA	
SHALLOW EXCAVATIONS	SEVERE - SLOPE, LARGE STONES, SMALL STONES	DIKES	241	EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH, PIPING, LARGE STONES
			2		
			3		
			4		
			5		
DWELLINGS WITHOUT BASEMENTS	SEVERE - SLOPE	PONDAQ	251	EXCAVATED PONDS AQUIFER FED	NO WATER
			2		
			3		
			4		
			5		
DWELLINGS WITH BASEMENTS	20-25% MODERATE - SLOPE, SHRINK-SWELL 25-100% SEVERE - SLOPE	DRAIN	261	DRAINAGE	NOT NEEDED
			2		
			3		
			4		
			5		
SMALL COMMERCIAL BUILDINGS	SEVERE - SLOPE	IRRIG	271	IRRIGATION	
			2		
			3		
			4		
			5		
LOCAL ROADS AND STREETS	SEVERE - SLOPE	TERRAC	281	TERRACES AND DIVERSIONS	SLOPE
			2		
			3		
			4		
			5		

[illegible]

KEYING ONLY			UNIT NAME: <u>LIBEG</u>		(2)	
RECORD NO.	CONTROL WORD	NO.	UNIT MODIFIER:		RECREATION	
	CAMPS	301	FOOTNDTE		KEYING ONLY	
		2	SEVERE - SLOPE, LARGE STONES, SMALL STONES		PLAYGDI 321	
		3				
		4	CAMP AREAS		PLAYGDI 321	
		5				
	PICNIC	311	SEVERE - SLOPE, LARGE STONES, SMALL STONES		PATHS 331	
		2				
		3	PICNIC AREAS		20-25%: MODERATE - SLOPE, LARGE STONES	
		4			25+ %: SEVERE - SLOPE	
		5				
CROPHD 451			CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)			
		2	CLASS- DETERMINING PHASE		CAPABILITY	
		3				
	CROPS	341	15-30% L		NIRR IRR. NIRR IRR. NIRR IRR. NIRR IRR. NIRR IRR. NIRR IRR. NIRR IRR.	
		2	15-30% ST-L		6E 6S	
		3				
		4				
		5				
		6				
		7				
		8				
		9				
		351				
		2				
		3				
WOODS 361			WOODLAND SUITABILITY			
		2	CLASS- DETERMINING PHASE		DRD SYM	
		3			ERDSIDN HAZARD	
		4			EQUIP. LIMIT	
		5			SEEDLING MORT'Y.	
		6			WINDTH. HAZARD	
		7			PLANT CDMPT.	
		8			POTENTIAL PRDUCTIVITY	
		9			IMPDRTANT TREES	
		371			SITE INDEX	
		2			TREES TO PLANT	
		3				
		4				
		5				
		6				
WINDBK 381			WIND BREAKS			
		2	CLASS- DETERMINING PHASE		SPECIES	
		3	ALL		RUSSIAN OLIVE	
		4			HT 15	
		5			SPECIES	
		6			HT 10	
WILDLF 391			WILDLIFE HABITAT SUITABILITY			
		2	CLASS- DETERMINING PHASE		POTENTIAL FOR HABITAT ELEMENTS	
		3	ALL		GRAIN & SEED	
		4			GRASS & LEGUME	
		5			WILD HERB.	
		6			HARDWD TREES	
					CONIFER PLANTS	
					SHRUBS	
					WETLAND PLANTS	
					SHALLDW WATER	
					OPENLAND WILDLIFE	
					WOODLAND WILDLIFE	
					WETLAND WILDLIFE	
					RANGELAND WILDLIFE	
PHASE 401			POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)			
		2	Ly 15-19" P.Z.		PLANT SYMBOL (NLSN)	
		3	COMMON PLANT NAME		LIBEG LOAM	
		4			LIBEG STONY LOAM	
		5				
		6				
		7				
		8				
		9				
		421	ANTelope BITTERBRUSH		PUTR2 10	
		2	BIG SAGEBRUSH		ARTR2 10	
		3	CANDY BLUEGRASS		POCA 10	
		4	COLUMBIA NEEDLEGRASS		STCO3 5	
		5	DAYO PASQUE		FEID 20	
		6	MOUNTAIN BROMEGRASS		BRCA5 5	
		7	SPIKE PASQUE		HEK1 10	
		8	THICKSPINE WHEATGRASS		AGDA 15	
		9	BLUEBUNCH WHEATGRASS		AGSP 15	
		421	SANDLEGO BLUEGRASS		POSE 5	
		2	SNOWDERAY		SYMPH 5	
		3				
		4				
		5				
		6				
PRODUC 431			POTENTIAL PRODUCTION (LBS./AC. DRY WT):			
		2	FAVORABLE YEARS		2400	
		3	NORMAL YEARS		2000	
			UNFAVORABLE YEARS		1400	
NOTES 441			FOOTNOTES			
		2	* NOT USUALLY UTILIZED BY LIVESTOCK.			
		3				
		4				
		5				
		6				
		7				

KEYING ONLY		
RECORD NO.	CONTROL	
	WORD	NO.
	MLRA	001
	STATE	011
	CLASS	021
	OESCR	031
		2
		3
		4
		5
		6
	PROP	04
		2
		3
		4
		5
		6
	PROP	051
		2
		3
		4
		5
		6
	PROP	061
	SEPTIC	071
		2
		3
		4
		5
	LAGOON	081
		2
		3
		4
		5
	TRENCH	091
		2
		3
		4
		5
	SANARE	101
		2
		3
		4
		5
	COVER	111
		2
		3
		4
		5
	EXCAV	121
		2
		3
		4
		5
	DWEL	131
		2
		3
		4
		5
	DWEL	141
		2
		3
		4
		5
	BLDGS	151
		2
		3
		4
		5
	ROADS	161
		2
		3
		4
		5
	REGION	171
		2
		3
		4
	REGION	181
		2
		3
		4
		5

MLRA(S) 47

STATE

RECORD NO.

AUTHOR(S)

DATE

KIND OF UNIT

SERIES

UNIT NAME

McCORT

REVISED

UNIT MODIFIER

CLASSIFICATION AND BRIEF SOIL DESCRIPTION

THE MCCORT SERIES ARE WELL DRAINIED SOILS FORMED IN GRAVELLY ALLUVIUM ON GENTLY SLOPING TO VERY STEEP ALLUVIAL FANS AND SLOPES. SLOPES ARE 2 TO 55 PERCENT. ELEVATION IS 9100 TO 9320 FEET. PPT IS 15 TO 20 INCHES. MAINT IS ABOUT 42°F. AND THE PPT IS 50 IN. TO 100 IN. TYPICALLY. THE SURFACE LAYER IS DARK BROWN GRAVELLY SANDY LOAM ABOUT 12 INCHES THICK. THE SUBSOIL IS REDDISH BROWN GRAVELLY SANDY LOAM ABOUT 9 INCHES THICK. THE SUBSTRATUM IS LIGHT REDDISH BROWN COBBLY SANDY LOAM TO 60 INCHES.

FOOTNOTE

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USOA TEXTURE	UNIFIED	AASHO	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX
					4	10	40	200		
0-2	GK-SL	CH-SL	A-2	5-5	55-80	50-70	30-52	15-30	15-25	5-10
21-25	GB-SL	SC-SL	A-1	15-40	40-60	30-50	20-35	6-15	14-20	NP

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
						STEEL	CONCRETE	K	T	
21-25	0.0	1.6 - 1.1	6.5 - 6.8	---	LOW	LOW	LOW	15	5	3
SAME DEPTH AS ABOVE	21-25	0.4 - 0.2	6.5 - 6.8	---	LOW	LOW	LOW			

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
NONE			24					> 60				B	LOW

FOOTNOTES

SANITARY FACILITIES

KEYING ONLY

FOOTNOTES

SOURCE MATERIAL

SEPTIC TANK ABSORPTION FIELDS	0-2% SLIGHT	FILL	191	ROADFILL	0-2% SLIGHT
	8-15% MODERATE-SLOPE		2		8-15% MODERATE-SLOPE
	15+% SEVERE-SLOPE		3		15+% SEVERE-SLOPE
			4		
			5		
SEWAGE LAGOONS	0-7% SEVERE-SEEPAGE	SAND	201	SAND	POOR: EXCESS FINES, LARGE STONES
	7+% SEVERE-SLOPE, SEEPAGE		2		
			3		
			4		
			5		
SANITARY LANDFILL (TRENCH)	0-25% SEVERE-SEEPAGE, SMALL STONES	GRAVEL	211	GRAVEL	FAIR: EXCESS FINES, LARGE STONES
	25+% SEVERE-SLOPE, SEEPAGE, SMALL STONES		2		
			3		
			4		
			5		
SANITARY LANDFILL (AREA)	0-15% SEVERE-SEEPAGE	SOIL	221	TOPSOIL	0-15% POOR-LARGE STONES, SMALL STONES
	15+% SEVERE-SLOPE, SEEPAGE		2		15+% POOR-SLOPE, LARGE STONES, SMALL STONES
			3		
			4		
			5		

FOOTNOTES

COMMUNITY DEVELOPMENT

FOOTNOTES

WATER MANAGEMENT

DAILY COVER FOR LANDFILL	0-15% POOR-SMALL STONES	PONDRES	231	POND RESERVOIR AREA	SLOPE, SEEPAGE
	15+% POOR-SLOPE, SMALL STONES		2		
			3		
			4		
			5		
SHALLOW EXCAVATIONS	0-15% SEVERE-SMALL STONES	DIKES	241	EMBANKMENTS DIKES AND LEVEES	LARGE STONES, SEEPAGE
	15+% SEVERE-SLOPE, SMALL STONES		2		
			3		
			4		
			5		
DWELLINGS WITHOUT BASEMENTS	0-8% MODERATE-LARGE STONES	PONDAQ	251	EXCAVATED PONDS AQUIFER FED	NO WATER
	8-15% MODERATE-SLOPE, LARGE STONES		2		
	15+% SEVERE-SLOPE		3		
			4		
			5		
DWELLINGS WITH BASEMENTS	0-15% MODERATE-LARGE STONES	DRAIN	261	DRAINAGE	NOT NEEDED
	15-25% MODERATE-SLOPE, LARGE STONES		2		
	25% SEVERE-SLOPE		3		
			4		
			5		
SMALL COMMERCIAL BUILDINGS	0-4% MODERATE-LARGE STONES	IRRIG	271	IRRIGATION	SLOPE, SEEPAGE, FAST INTAKE
	4-8% MODERATE-SLOPE, LARGE STONES		2		
	8+% SEVERE-SLOPE		3		
			4		
			5		
LOCAL ROADS AND STREETS	0-8% SLIGHT	TERRAC	281	TERRACES AND DIVERSIONS	SLOPE, LARGE STONES
	8-15% MODERATE-SLOPE</				

SOIL SURVEY INTERPRETATIONS

KEYING ONLY			RECORD NO.		CONTROL NO.										
RECORD NO.	WORD	NO.	MLRA	001	STATE	011									
			MLRA(S) <u>34, 47</u>	KIND OF UNIT <u>SERIES</u>	UNIT NAME <u>PISHKUN</u>										
			STATE <u>WYOMING</u>	RECORD NO. <u></u>	AUTHOR(S) <u>HBR</u>	DATE <u>4/74</u>									
			CLASSIFICATION AND BRIEF SOIL DESCRIPTION												
CLASS <u>021</u>			TYPIC CRYOTHEM: LOAMY-SKELETAL, MIXED												
DESCR <u>031</u>			THE PISHKUN SERIES ARE WELL DRAINED SOILS FORMED IN COLLUVIUM FROM SHALE ON MODERATELY STEEP AND STEEP MOUNTAIN SIDES SLOPES ARE 15 TO 50 PERCENT. ELEVATION IS 7500 TO 8500 FEET. PPT IS 13 TO 16 INCHES. MAST IS ABOUT 43°F., AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS YELLOWISH BROWN AND LIGHT YELLOWISH BROWN CHANNERY CLAY LOAM TO 60 INCHES.												
FOOTNOTE			ESTIMATED SOIL PROPERTIES												
DEPTH (IN.)			USDA TEXTURE	UNIFIED	AASHO	FRACT. > 3 IN. (PCT)									
PROP 041			0-60 SR-CN-SL-CN-SICL	GC, GM-GC	A-2, A-4, A-5A-6, A-7	0-5									
2															
3															
4															
5															
6															
DEPTH (IN.)			PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY	EROSION FACTORS	WIND EROD. GROUP					
PROP 051			0.6 - 2.0	.06 - .12	7.9 - 8.6	2-8	MODERATE	STEEL HIGH CONCRETE MODERATE	K 32 T 5	4L					
2															
3															
4															
5															
6															
FLOODING			HIGH WATER TABLE		CEMENTED PAN		BEDROCK		SUBSIDENCE						
FREQUENCY			DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
PROP 061			NONE											B	MODERATE
FOOTNOTES			SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL						
SEPTIC 071			SEVERE - SLOPE		FILL 191		ROADFILL		15-25%: FAIR - SLOPE, LOW STRENGTH, FROST ACTION						
2					2										
3					3										
4					4										
5					5										
LAGOON 081			SEVERE - SLOPE		SAND 201		SAND		UNSUITED						
2					2										
3					3										
4					4										
5					5										
TRENCH 091			15-25%: MODERATE - SLOPE		GRAVEL 211		GRAVEL		POOR - EXCESS FINES						
2			25%: SEVERE - SLOPE		2										
3					3										
4					4										
5					5										
SANARE 101			SEVERE - SLOPE		SOIL 221		TOPSOIL		POOR - SLOPE, SMALL STONES, FINE SALT						
2					2										
3					3										
4					4										
5					5										
COVER 111			POOR - SLOPE						FOOTNOTES						
2									WATER MANAGEMENT						
3									SLOPE						
4															
5															
FOOTNOTES			COMMUNITY DEVELOPMENT		KEYING ONLY		FOOTNOTES								
EXCAV 121			SEVERE - SLOPE		Dikes 241		EMBANKMENTS		LOW STRENGTH SHRINK-SWELL						
2					2		DIKES AND LEVEES								
3					3										
4					4										
5					5										
DWEL 131			SEVERE - SLOPE, SHRINK-SWELL		POND 251		EXCAVATED PONDS		NO WATER						
2					2		AQUIFER FED								
3					3										
4					4										
5					5										
DWEL 141			15-25%: MODERATE - SHRINK-SWELL		DRAIN 261		DRAINAGE		NOT NEEDED						
2			25%: SEVERE - SLOPE		2										
3					3										
4					4										
5					5										
BLDG 151			SEVERE - SLOPE		IRRIG 271		IRRIGATION								
2					2										
3					3										
4					4										
5					5										
ROADS 161			SEVERE - SLOPE		TERRAC 281		TERRACES AND DIVERSIONS		SLOPE						
2					2										
3					3										
4					4										
5					5										
FOOTNOTES			REGIONAL INTERPRETATIONS		KEYING ONLY		FOOTNOTES								
REGION 171			POTENTIAL		WATER 291		GRASSED WATERWAYS								
2			SLIDE		2										
3			HAZARD		3										
4					4										
5					5										
REGION 181															
2															
3															
4															
5															

✓

MLRA(S) 34 KIND OF UNIT SERIES UNIT NAME RAYALL
STATE WYOMING RECORD NO. AUTHOR(S) HBR DATE 5/74 REVISED UNIT MODIFIER
CLASSIFICATION AND BRIEF SOIL DESCRIPTION

THE RAVALLI SERIES ARE WELL DRAINED, STRONGLY SALINE. ALKALINE SOILS FORMED IN ALLUVIUM ON GENTLY SLOPING ALLUVIAL FANS. SLOPES ARE 1 TO 6 PERCENT. ELEVATION IS 6300 TO 7300 FEET. PPT IS 10 TO 12 INCHES. FROST IS ABOUT 45°F., AND FPF IS 60 TO 90 DAYS. TYPICALLY, THE SURFACE IS PALE BROWN FINE SANDY LOAM ABOUT 3 INCHES THICK. THE SUBSOIL IS BROWN CLAY LOAM ABOUT 8 INCHES THICK. THE SUBSTRATUM IS LIGHT YELLOWISH BROWN FINE SANDY LOAM TO 60 INCHES.

[illegible]

FOOTNOTES 7		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES 7		SOURCE MATERIAL	
SEPTIC TANK ABSORPTION FIELDS	SLIGHT	FILL	191	ROADFILL	FAIR - LOW STRENGTH				
			2						
			3						
			4						
			5						
SEWAGE LAGOONS	SEVERE - SEEPAGE	SAND	201	SAND	UNSUITED				
			2						
			3						
			4						
			5						
SANITARY LANDFILL (TRENCH)	SEVERE - SEEPAGE	GRAVEL	211	GRAVEL	UNSUITED				
			2						
			3						
			4						
			5						
SANITARY LANDFILL (AREA)	SLIGHT	SOIL	221	TOPSOIL	POOR - EXCESS ALKALI, EXCESS SALT				
			2						
			3						
			4						
			5						

DAILY COVER FOR LANDFILL	GOOD			FOOTNOTES	WATER MANAGEMENT
		PONDRS	231		SLOPE, SEE PAGE
			2	POND	
			3	RESERVOIR	

FOOTNOTES	COMMUNITY DEVELOPMENT		4	AREA		
			5			
	SLIGHT	DIKES	241		EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH, PIPING
			2			
			3			
		4				
SHALLOW EXCAVATIONS			5			

	SLIGHT	PONDAQ	251		NO WATER
DWELLINGS			2	EXCAVATED	
WITHOUT			3	PONDS	
BASEMENTS			4	AQUIFER	
			5	FED.	

OWELLINGS WITH BASEMENTS	SLIGHT	DRAIN	261	DRAINAGE	NOT NEEDED
			2		
			3		
			4		
			5		

SMALL COMMERCIAL BUILDINGS	0-4%: SLIGHT	IRRIG	271	IRRIGATION	SLOPE, EXCESS ALKALI, EXCESS SALT
	4-6%: MODERATE-SLOPE		2		
			3		
			4		
			5		
	MODERATE SLOPE	TERRA	281		SLOPE RISING GRADES EASILY

LOCAL	MODERATE - LOW STRENGTH	TERRACE	2	TERRACES	SCLOPE, PILING, EROSION, EASIER
ROADS AND			3	AND	
STREETS			4	DIVERSIONS	
			5		

FOOTNOTES		REGIONAL INTERPRETATIONS	WATERW	291	<div> <div>GRASSED WATERWAYS</div> </div>
POTENTIAL	MEDIUM			2	
SLIDE				3	
HAZARD				4	
				5	

KEYING ONLY
RECORD NO. CONTROL
WORD NO.

UNIT NAME: RAVALLI
UNIT MODIFIER:

RECREATION
KEYING ONLY
PLAYGDS 321
PATHS 331

FOOTNOTE
SLIGHT
SLIGHT
SLIGHT

FOOTNOTE
1-2%: SLIGHT
2-6%: MODERATE-SLOPE
SLIGHT

CAMP AREAS
PICNIC AREAS

CROPHD 451
CROPS 341

CLASS-DETERMINING PHASE
CAPABILITY
NIRR IRR NIRR IRR NIRR IRR NIRR IRR NIRR IRR NIRR IRR NIRR IRR NIRR IRR

ALL 7571 6571

WOODS 361

CLASS-DETERMINING PHASE
ORD SYM
EROSION HAZARD
EQUIP. LIMIT
SEEDLING MORTY.
WINDTH. HAZARD
PLANT COMPET.
POTENTIAL PRODUCTIVITY
IMPORTANT TREES
SITE INDEX
TREES TO PLANT

NONE

WINDBK 381

CLASS-DETERMINING PHASE
SPECIES HT
SPECIES HT
SPECIES HT

NONE

WILDLF 391

CLASS-DETERMINING PHASE
POTENTIAL FOR HABITAT ELEMENTS
POTENTIAL AS HABITAT FOR:
GRAIN & SEED
GRASS & LEGUME
WILD HERB.
HARDWD TREES
CONIFER PLANTS
SHRUBS
WETLAND PLANTS
SHALLOW WATER
OPENLAND WILDLIFE
WOODLAND WILDLIFE
WETLAND WILDLIFE
RANGELAND WILDLIFE

NIRR IRR 0-1 1-2 2-3 3+ V. POOR POOR POOR POOR V. POOR POOR V. POOR POOR V. POOR POOR V. POOR POOR V. POOR POOR

FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR FAIR

POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR POOR

PHASE 401
PLANT 411

FOOTNOTE
S. U. 10-14" AZ.
COMMON PLANT NAME
PLANT SYMBOL (NLSN)
PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE

ALL

BOTTLEBRUSH SQUIRRELTAIL SIHY 5
SAGEHUR SALTBUSH ATNU2 50
GREASEWOOD SARCO 5
INDIAN RICEGRASS ORHY 10
THICKSPIKE WHEATGRASS AGDA 15
WINTERFAT EUROT 10

0000 5

PRODUC 431

POTENTIAL PRODUCTION (LBS./AC. DRY WT):
FAVORABLE YEARS
NORMAL YEARS
UNFAVORABLE YEARS

750
600
400

NOTES 441

FOOTNOTES

SOIL SURVEY INTERPRETATIONS

KEYING ONLY			RECORD NO.		MLRA(S)		KIND OF UNIT		UNIT NAME				
RECORD NO.	WORD	NO.	STATE	MLRA	001	001	SERIES	REDCREEK					
			STATE	RECORD NO.	AUTHOR(S)	DATE	REVISED	UNIT MODIFIER					
CLASSIFICATION AND BRIEF SOIL DESCRIPTION													
CLASS	021	LITHIC, USTIC, TORRIORTHENT, LOAMY, MIXED, (CALCAREOUS), FRIED											
OESCR	031	THE REDCREAK SERIES ARE WELL DRAINER, SHALLOW SOILS FORMED IN RESIDUUM FROM SANDSTONE ON GENTLY SLOPING TO STEEP UPLANDS. SLOPES ARE 2 TO 30 PERCENT. ELEVATION IS 6300 TO 7800 FEET. PPT IS 10 TO 12 INCHES. MAINT. IS ABOUT 66°F. AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS A LIGHT REDDISH BROWN FINE SANDY LOAM ABOUT 10 INCHES THICK UNDERLAIN BY LIGHT REDDISH BROWN CHANNERY SANDY LOAM ABOUT 5 INCHES THICK, UNDERLAIN BY HARD SANDSTONE.											
ESTIMATED SOIL PROPERTIES													
		DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASD	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX	
							4	10	40	200			
PROP	041	0-10	FSL	SM, SM-SC, SC	A-2, A-4	0-5	75-100	75-100	50-60	35-50	15-30	2-10	
	2	10-15	CH-SL	SM, SM-SC, SC	A-2	0-10	75-100	50-75	30-50	15-30	10-25	NP-10	
	3	15	UWB										
	4												
	5												
	6												
		DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSION		EROSION FACTORS	WIND EROD. GROUP		
								STEEL	CONCRETE	K	T		
PROP	051	SAME DEPTH AS ABOVE	2.0-6.0	.12-.16	7.9-8.4	---	LOW	LOW	LOW	.32	1	3	
	2		2.0-6.0	.09-.12	7.9-8.4	---	LOW	LOW	LOW				
	3												
	4												
	5												
	6												
		FLOODING		HIGH WATER TABLE		CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	
				DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)	POTENTIAL FROST ACTION
PROP	061	NONE		26					10-20	RIPPABLE			D LOW
FOOTNOTES 7													
SANITARY FACILITIES													
SEPTIC	071	2-15% SEVERE - DEPTH TO ROCK		FILL		191	ROADFILL		FOOR - THIN LAYER				
	2	15+ % SEVERE - SLOPE, DEPTH TO ROCK				2							
	3					3							
	4					4							
	5					5							
LAGOON	081	2-7% SEVERE - DEPTH TO ROCK		SAND		201	SAND		UNSUITED				
	2	7+ % SEVERE - SLOPE, DEPTH TO ROCK				2							
	3					3							
	4					4							
	5					5							
TRENCH	091	SEVERE - DEPTH TO ROCK		GRAVEL		211	GRAVEL		UNSUITED				
	2					2							
	3					3							
	4					4							
	5					5							
SANARE	101	2-8% SLIGHT		SOIL		221	TOPSOIL		POOR - THIN LAYER, AREA RECLAIM				
	2	8-15% MODERATE - SLOPE				2							
	3	15+ % SEVERE - SLOPE				3							
	4					4							
	5					5							
COVER	111	2-15% SEVERE - THIN LAYER							FOOTNOTES 7				
	2	15+ % SEVERE - SLOPE, THIN LAYER							WATER MANAGEMENT				
	3												
	4												
	5												
FOOTNOTES 7													
COMMUNITY DEVELOPMENT													
EXCAV	121	2-15% SEVERE - DEPTH TO ROCK		DIKES		241	EMBANKMENTS		THIN LAYER, PIPING				
	2	15+ % SEVERE - SLOPE, DEPTH TO ROCK				2	Dikes AND LEVES						
	3					3							
	4					4							
	5					5							
OWEL	131	2-15% SEVERE - DEPTH TO ROCK		PDNDQ		251	EXCAVATED PONDS		NO WATER				
	2	15+ % SEVERE - SLOPE, DEPTH TO ROCK				2	AQUIFER FED						
	3					3							
	4					4							
	5					5							
DWEL	141	2-25% SEVERE - DEPTH TO ROCK		DRAIN		261	DRAINAGE		NOT NEEDED				
	2	25+ % SEVERE - SLOPE, DEPTH TO ROCK				2							
	3					3							
	4					4							
	5					5							
BLOGS	151	2-8% SEVERE - DEPTH TO ROCK		IRRIG		271	IRRIGATION		SLOPE, ROOTING DEPTH				
	2	8+ % SEVERE - SLOPE, DEPTH TO ROCK				2							
	3					3							
	4					4							
	5					5							
ROADS	161	2-8% MODERATE - DEPTH TO ROCK		TERRAC		281	TERRACES AND DIVERSIONS		SLOPE DEPTH TO ROCK				
	2	8-15% MODERATE - SLOPE, DEPTH TO ROCK				2							
	3	15+ % SEVERE - SLOPE				3							
	4					4							
	5					5							
FOOTNOTES 7													
REGIONAL INTERPRETATIONS													
REGION	171			WATERW		291	GRASSED WATERWAYS						
	2					2							
	3					3							
	4					4							
	5					5							
REGION	181												
	2												
	3												
	4												
	5												

KEYING ONLY

RECORD NO.

CONTROL

WORD

NO.

UNIT NAME: REDCREEN

UNIT MODIFIER:

FOOTNOTE

2-8%: SLIGHT

8-15%: MODERATE - SLOPE

15+ %: SEVERE - SLOPE

RECREATION

KEYING ONLY

PLAYGDS

321

2

3

4

5

FOOTNOTE

2-4%: SEVERE - DEPTH TO ROCK

4+ %: SEVERE - SLOPE, DEPTH TO ROCK

CAMP AREAS

PICNIC AREAS

PLAYGROUNDS

PATHS AND TRAILS

2-8%: SLIGHT

8-15%: MODERATE - SLOPE

15+ %: SEVERE - SLOPE

0-15%: SLIGHT

15-25%: MODERATE - SLOPE

25+ %: SEVERE - SLOPE

FOOTNOTE

2-8%: SLIGHT

8-15%: MODERATE - SLOPE

15+ %: SEVERE - SLOPE

CLASS- DETERMINING PHASE

CAPABILITY

NIRR

IRR

NIRR

IRR

NIRR

IRR

NIRR

IRR

NIRR

IRR

NIRR

IRR

NIRR

IRR

NIRR

IRR

CROPHD

451

2

3

CROPS

341

2

3

4

5

6

7

8

9

351

2

3

FOOTNOTE

CLASS- DETERMINING PHASE

ORD SYM

EROSION HAZARD

EQUIP. LIMIT

SEEDLING MORTY.

WINDTH. HAZARD

PLANT COMPET.

POTENTIAL PRODUCTIVITY

IMPORTANT TREES

SITE INDEX

TREES TO PLANT

WOODS

361

2

3

4

5

6

7

8

9

371

2

3

4

5

6

FOOTNOTE

CLASS- DETERMINING PHASE

SPECIES

HT

SPECIES

HT

SPECIES

HT

SPECIES

HT

WINDBK

381

2

3

4

5

6

FOOTNOTE

CLASS- DETERMINING PHASE

GRAIN & SEED

GRASS & LEGUME

WILD HERB.

HARDWD TREES

CONIFER PLANTS

SHRUBS

WETLAND PLANTS

SHALLOW WATER

OPENLAND WILDLIFE

WOODLAND WILDLIFE

WETLAND WILDLIFE

WETLAND WILDLIFE

WILDLF

391

2

3

4

5

6

FOOTNOTE

CLASS- DETERMINING PHASE

POTENTIAL NATIVE PLANT COMMUNITY (RANGE AND OR FOREST USE POTENTIAL)

PERCENTAGE COMPOSITION (BY WT) BY CLASS

PHASE

401

2

PLANT

411

2

3

4

5

6

7

8

9

421

2

3

4

5

6

PRODUC

431

2

3

NOTES

441

2

3

4

5

6

7

SOIL SURVEY INTERPRETATIONS

KEYING ONLY			RECORD NO.		CONTROL		MLRA(S)		STATE		KIND OF UNIT		UNIT NAME										
RECORD NO.	WORD NO.	MLRA	STATE	RECORD NO.	AUTHOR(S)	DATE	REVISED	UNIT MODIFIER															
CLASSIFICATION AND BRIEF SOIL DESCRIPTION																							
LITHIC, USTIC, TORRIFORM, CLAY, MIXED, (CALCAREOUS), FRIGID																							
THE REDWASH SERIES ARE WELL DRAINED, VERY SHALLOW SOILS FORMED IN RESIDUUM FROM SANDSTONE ON SLOPING TO STEEP RIDGES AND SLOPES. SLOPES ARE 6 TO 40 PERCENT. ELEVATION IS 6300 TO 7000 FEET. PPT IS 10 TO 12 INCHES. MAINT IS ABOUT 44°F. AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS REDDISH BROWN SANDY LOAM ABOUT 4 INCHES THICK UNDERLAIN BY HARD SANDSTONE.																							
ESTIMATED SOIL PROPERTIES																							
DEPTH (IN.)		USDA TEXTURE		UNIFIED		AASHO		FRACT. > 3 IN. (PCT)		PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT		PLASTICITY INDEX							
PROP 041		0-6 SL, CN-SL		SM, SN-SG		9-2		0-5		75-100 50-100 20-60 15-35				10-25		NP-10							
2		6+ UWB																					
3																							
4																							
5																							
6																							
DEPTH (IN.)		PERMEABILITY (IN/HR)		AVAILABLE WATER CAPACITY (IN/IN)		SOIL REACTION (PH)		SALINITY (MMHOS/CM)		SHRINK-SWELL POTENTIAL		CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP							
PROP 051		2.0-6.0		0.8-1.4		7.0-8.0				LOW		LOW		LOW		.32 1 8							
2																							
3																							
4																							
5																							
6																							
FLOODING		FREQUENCY		DURATION		MONTHS		DEPTH (FT)		KIND		MONTHS		CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP		POTENTIAL FROST ACTION	
PROP 061		NONE						>6								3-10		RIPPABLE				D LOW	
FOOTNOTES		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL															
SEPTIC 071		6-15% SEVERE - DEPTH TO ROCK		FILL 191		ROADFILL		POOR - THIN LAYER															
2		15+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
LAGOON 081		6-7% SEVERE - DEPTH TO ROCK		SAND 201		SAND		UNSUITED															
2		7+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
TRENCH 091		6-25% SEVERE - DEPTH TO ROCK		GRAVEL 211		GRAVEL		UNSUITED															
2		25+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
SANARE 101		6-8% SLIGHT		SOIL 221		TOPSOIL		POOR - THIN LAYER, AREA RECLAIM															
2		8-15% MODERATE - SLOPE		2																			
3		15+ % SEVERE - SLOPE		3																			
4				4																			
5				5																			
COVER 111		6-15% SEVERE - THIN LAYER																					
2		15+ % SEVERE, THIN LAYER																					
3																							
4																							
5																							
FOOTNOTES		COMMUNITY DEVELOPMENT		KEYING ONLY		FOOTNOTES		WATER MANAGEMENT															
EXCAV 121		6-15% SEVERE - DEPTH TO ROCK		DIKES 241		EMBANKMENTS		THIN LAYER, PIPING															
2		15+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
DWEL 131		6-15% SEVERE - DEPTH TO ROCK		POND AQ 251		EXCAVATED PONDS		NO WATER															
2		15+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
DWEL 141		6-25% SEVERE - DEPTH TO ROCK		DRAIN 261		DRAINAGE		NOT NEEDED															
2		25+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
BLDGS 151		6-8% SEVERE - DEPTH TO ROCK		IRRIG 271		IRRIGATION		SLOPE, ROOTING DEPTH															
2		8+ % SEVERE - SLOPE, DEPTH TO ROCK		2																			
3				3																			
4				4																			
5				5																			
ROADS 161		6-8% MODERATE - DEPTH TO ROCK		TERRAC 281		TERRACES AND OVERSIGNS		SLOPE, DEPTH TO ROCK															
2		8-15% MODERATE - SLOPE, DEPTH TO ROCK		2																			
3		15+ % SEVERE - SLOPE		3																			
4				4																			
5				5																			
FOOTNOTES		REGIONAL INTERPRETATIONS		KEYING ONLY		FOOTNOTES		GRASSED WATERWAYS															
REGION 171				WATERW 291		GRASSED WATERWAYS																	
2				2																			
3				3																			
4				4																			
5				5																			
REGION 181																							
2																							
3																							
4																							
5																							

KEYING ONLY			UNIT NAME: <u>RED WASH</u>		RECREATION		FOOTNOTE									
RECORD NO.	WORD	NO.	UNIT MODIFIER:		KEYING ONLY	FOOTNOTE										
	CAMPS	301			PLAYGDS	321	SEVERE - SLOPE, DEPTH TO ROCK									
		2				2										
		3				3										
		4				4										
		5				5										
	PICNIC	311			PATHS	331	0-15%: MODERATE - SMALL STONES									
		2				2	15-25%: MODERATE - SLOPE, SMALL STONES									
		3				3	25+ %: SEVERE - SLOPE									
		4				4										
		5				5										
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)																
CROPHD		451	CLASS-DETERMINING PHASE		CAPABILITY											
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9														
		351														
		2														
		3														
WOODLAND SUITABILITY																
WOODS		361	CLASS-DETERMINING PHASE		ORD SYM	MANAGEMENT PROBLEMS			POTENTIAL PRODUCTIVITY		TREES TO PLANT					
		2				EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDEX				
		3									JUNIPER					
		4														
		5														
		6														
		7														
		8														
		9														
		371														
		2														
		3														
		4														
		5														
		6														
WIND BREAKS																
WINDBK		381	CLASS-DETERMINING PHASE		SPECIES	HT	SPECIES		HT	SPECIES		HT				
		2			NONE											
		3														
		4														
		5														
		6														
WILDLIFE HABITAT SUITABILITY																
WILDLF		391	CLASS-DETERMINING PHASE		POTENTIAL FOR HABITAT ELEMENTS				POTENTIAL AS HABITAT FOR:							
		2			GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
		3			V. POOR	V. POOR	POOR			POOR	V. POOR	V. POOR	V. POOR		V. POOR	POOR
		4														
		5														
		6														
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)																
PHASE		401	10-14" COMMON PLANT NAME		PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE										
		2														
	PLANT	411	ANTELOPE BITTERBRUSH		POTK2	5										
		2	BLACK SAGEBRUSH		ARARN	5										
		3	BLUEGRASS WHEATGRASS		AGSP	30										
		4	BOTTLE BRUSH SQUIRREL TAIL		SLHY	5										
		5	JUNIPER		JUNIP	5										
		6	LOW RABBIT BRUSH		CHVH2	5										
		7	MOUNTAIN MAHOGANY		CERCO	15										
		8	PRAIRIE JONAGRASS		KOCR	5										
		9	SANDBERG BLUEGRASS		POSB	5										
		421	SPUNK BRUSH SUMAC		RHTR	5										
		2			PPEF	10										
		3			PPGG	5										
		4														
		5														
		6														
PRODC		431	POTENTIAL PRODUCTION (LBS./AC. DRY WT):													
		2	FAVORABLE YEARS		600											
		3	NORMAL YEARS		450											
		4	UNFAVORABLE YEARS		250											
FOOTNOTES																
NOTES		441	* NOT USUALLY													
		2														
		3														
		4														
		5														
		6														
		7														

KEYING ONLY			SOIL SURVEY INTERPRETATIONS										✓									
RECORD NO.	CONTROL NO.	WORD NO.	MLRA(S)	STATE	RECORD NO.	AUTHOR(S)	DATE	KIND OF UNIT	SERIES	UNIT NAME												
001	001	001	34, 47	WYOMING		HBY	4/74	REVISED		UNIT NUMBER												
CLASSIFICATION AND BRIEF SOIL DESCRIPTION																						
CLASS	DESCR	021	TYPIC CRYORTHENT; LOAMY, MIXED (CALCAREOUS), SHALLOW																			
		031	THE ROXAL SERIES ARE WELL DRAINED, SHALLOW SOILS FORMED IN RESIDUUM FROM SHALE ON GENTLY SLOPING TO MODERATELY STEEP UPLAND SPUR RIDGES AND MOUNTAIN SIDES. SLOPES ARE 3 TO 20 PERCENT. ELEVATION IS 7700 TO 8500 FEET. PPT IS 13 TO 16 INCHES. MAAT IS ABOUT 44°F. AND PPS IS 60 TO 90 DAYS. TYPICALLY THE PROFILE IS LIGHT YELLOWISH BROWN AND PALE YELLOW LOAM ABOUT 15 INCHES THICK UNDERLAIN BY SOFT SHALE.																			
FOOTNOTE													ESTIMATED SOIL PROPERTIES									
		DEPTH (IN.)	USDA TEXTURE		UNIFIED		AASHO		FRACT. > 3 IN. (PCT)		PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT		PLASTICITY INDEX					
PROP		041	0-15	L, CL, GR-L	ML-CL, CL, GC, SC		A-4, A-6		0-5		70-100	50-100	50-95	95-75	15-35	5-15						
		2	15+	UWB																		
		3																				
		4																				
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		41																				
		42																				
		43																				
		44																				
		45																				
		46																				

KEYING ONLY			UNIT NAME: <u>ROXAL</u>		RECREATION		FOOTNOTE	
RECORD NO.	CONTROL WORD	NO.	UNIT MODIFIER:	FOOTNOTE	KEYING ONLY	FOOTNOTE	FOOTNOTE	FOOTNOTE
	CAMPS	301		3-8%: SLIGHT	PLAYGRD	321	3-6%: SEVERE - DEPTH TO ROCK	
		2		8-15%: MODERATE - SLOPE		2	1+%: SEVERE - SLOPE, DEPTH TO ROCK	
		3		15+%: SEVERE - SLOPE		3		
		4				4		
		5				5		
	PICNIC	311		3-8%: SLIGHT	PATHS	331	3-15%: SLIGHT	
		2		8-15%: MODERATE - SLOPE		2	15-25%: MODERATE - SLOPE	
		3		15+%: SEVERE - SLOPE		3		
		4				4		
		5				5		
	CROPHD	451						
		2						
		3						
	CROPS	341						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		351						
		2						
		3						
	WOODS	361						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		371						
		2						
		3						
		4						
		5						
		6						
	WINDBK	381						
		2						
		3						
		4						
		5						
		6						
	WILDLF	391						
		2						
		3						
		4						
		5						
		6						
	PHASE	401						
		2						
	PLANT	411						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		421						
		2						
		3						
		4						
		5						
		6						
	PRODUC	431						
		2						
		3						
	NOTES	441						
		2						
		3						
		4						
		5						
		6						
		7						

SOIL SURVEY INTERPRETATIONS

KEYING ONLY		
RECORD NO.	CONTROL	NO.
	WORD	
	MLRA	001
	STATE	011
CLASS	021	
DESCR	031	
	2	
	3	
	4	
	5	
	6	

MLRA(S) 34.47 KIND OF UNIT SERIES UNIT NAME SCOUT
STATE WYOMING RECORD NO. AUTHOR(S) HBR DATE 4/74 REVISED UNIT MODIFIER
CLASSIFICATION AND BRIEF SOIL DESCRIPTION

TYPIC CRYOCHREPT; LOAMY-SKELETAL, MIXED
THE SCOUT SERIES ARE WELL DRAINED SOILS FORMED IN GRAVELLY ALLUVIUM ON GENTLY SLOPING TO STEEP MOUNTAIN SLOPES. SLOPES ARE 3 TO 30 PERCENT. ELEVATION IS 8500 TO 9500 FEET. PPT IS 15 TO 19 INCHES. MAAT IS ABOUT 40°F., AND THE FFS IS 50 TO 70 DAYS. TYPICALLY, THE SURFACE HAS A 1 INCH ORGANIC MAT UNDERLAIN BY BLACK COBBLY SANDY LOAM ABOUT 1 INCH THICK THE SUBSURFACE LAYER IS PINKISH GRAY COBBLY SANDY LOAM ABOUT 12 INCHES THICK. THE SUBSOIL AND SUBSTRATUM ARE LIGHT REDDISH BROWN COBBLY SANDY LOAM TO 60 INCHES.

FOOTNOTE		ESTIMATED SOIL PROPERTIES								
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLAS- TICITY INDEX
					4	10	40	200		
0-60	CB-SL	GM, GW-GM	A-1	20-40	40-60	38-50	20-35	6-15	NP-20	NP

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
						STEEL	CONCRETE	K	T	
PROP 051	2.0-6.0	.04-.07	6.1-6.5	---	LOW	HIGH	MODERATE	17	5	3
SAME DEPTH AS ABOVE										
2										
3										
4										
5										
6										

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDIENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
PROP 061	NONE		>6					>60				B	MODERATE

FOOTNOTES		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL	
SEPTIC 071	2	SEPTIC TANK	3-8% SLIGHT	FILL	191	ROADFILL	2	0-8% GOOD	
	3	ABSORPTION FIELDS	8-15% MODERATE - SLOPE		2		3	8-15% FAIR - SLOPE	
	4		15+% SEVERE - SLOPE		3		4	15+% POOR - SLOPE	
	5				4		5		
LAGOON 081	2	SEWAGE LAGOONS	3-7% SEVERE - SEEPAGE	SAND	201	SAND	2	POOR: EXCESS FINES, LARGE STONES	
	3		7+ % SEVERE - SLOPE, SEEPAGE		2		3		
	4				3		4		
	5				4		5		
TRENCH 091	2	SANITARY LANDFILL (TRENCH)	3-25% SEVERE - SEEPAGE, SMALL STONES	GRAVEL	211	GRAVEL	2	FAIR: EXCESS FINES, LARGE STONES	
	3		25+ % SEVERE - SLOPE, SEEPAGE, SMALL STONES		2		3		
	4				3		4		
	5				4		5		
SANARE 101	2	SANITARY LANDFILL (AREA)	3-15% SEVERE - SEEPAGE	SOIL	221	TOPSOIL	2	0-15% POOR: LARGE STONES, SMALL STONES	
	3		15+ % SEVERE - SLOPE, SEEPAGE		2		3	15+ % POOR - SLOPE, LARGE STONES, SMALL STONES	
	4				3		4		
	5				4		5		
COVER 111	2	DAILY COVER FOR LANDFILL	0-15% POOR - SMALL STONES						
	3		15+ % POOR - SLOPE, SMALL STONES	PONDERS	231				
	4				2				
	5				3				

FOOTNOTES		COMMUNITY DEVELOPMENT		FOOTNOTES		WATER MANAGEMENT	
EXCAV 121	2	SHALLOW EXCAVATIONS	0-15% SEVERE - SMALL STONES	DIKES	241	EMBANKMENTS	2
	3		15+ % SEVERE - SLOPE, SMALL STONES		2	DIKES AND LEVEES	3
	4				3		4
	5				4		5
DWEL 131	2	DWELLINGS WITHOUT BASEMENTS	0-8% MODERATE - LARGE STONES	PONDAQ	251	EXCAVATED PONDS	2
	3		8-15% MODERATE - SLOPE, LARGE STONES		2	PODS AQUIFER FED	3
	4		15+ % SEVERE - SLOPE		3		4
	5				4		5
DWEL 141	2	DWELLINGS WITH BASEMENTS	0-15% MODERATE - LARGE STONES	DRAIN	261	DRAINAGE	2
	3		15-25% MODERATE - SLOPE, LARGE STONES		2		3
	4		25+ % SEVERE - SLOPE		3		4
	5				4		5
BLDGS 151	2	SMALL COMMERCIAL BUILDINGS	0-4% MODERATE - LARGE STONES	IRRIG	271	IRRIGATION	2
	3		4-8% MODERATE - SLOPE, LARGE STONES		2		3
	4		8+ % SEVERE - SLOPE		3		4
	5				4		5
ROADS 161	2	LOCAL ROADS AND STREETS	0-8% SLIGHT	TERRAC	281	TERRACES AND DIVERSIONS	2
	3		8-15% MODERATE - SLOPE		2		3
	4		15+ % SEVERE - SLOPE		3		4
	5				4		5

FOOTNOTES		REGIONAL INTERPRETATIONS		FOOTNOTES		GRASSED WATERWAYS	
REGION 171	2	POTENTIAL SLIDE HAZARD	LOW		2		
	3				3		
	4				4		
	5				5		
REGION 181	2						
	3						
	4						
	5						

SOIL SURVEY INTERPRETATIONS

KEYING ONLY			RECORD NO.		CONTROL		MLRA(S)		KIND OF UNIT		UNIT NAME		
RECORD NO.	WORD	NO.	MLRA	001	STATE	011	STATE	WYOMING	RECORD NO.	AUTHOR(S)	DATE	REVISED	UNIT MODIFIER
CLASSIFICATION AND BRIEF SOIL DESCRIPTION													
CLASS	021	VETIC TOBACCO, WET, MOIST, MIXED (CALCAREOUS), FRIGID											
DESCR	031	THE SOILS ARE SERIES ARE WET, MOIST, MIXED (CALCAREOUS), FRIGID, ALLOUVIAL, STEEP, ALLUVIAL, FANS AND MOUNTAIN SLOPES, SLOPES ARE TO 60 PERCENT, GENERALLY SOUTH FACING, ELEVATION IS 7000 TO 8500 FEET, PPT IS 12 TO 14 INCHES, MAINT IS ABOUT 44°F, AND THERE IS 60 TO 90 DAYS, TYPICALLY, THE SURFACE LAYER IS BROWN GRAYEY LOAM ABOUT 9 INCHES THICK, THE SUBSOIL AND SUBSTRATA ARE REDDISH BROWN CLAY LOAM TO 160 INCHES											
FOOTNOTE													
ESTIMATED SOIL PROPERTIES													
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRAC. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX			
PROP 041	2	0-60 GM L.S. 11	SM, SM-SC, SC	10-40	60-80	45-70	35-65	15-30	NY-30	NP			
2													
3													
4													
5													
6													
DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP			
PROP 051	2	2.0-6.0	04-11	5.7-8.1	LOW	LOW	LOW	17	5	8			
2													
3													
4													
5													
6													
FLOODING													
HIGH WATER TABLE													
CEMENTED PAN													
BEDROCK													
SUBSIDENCE													
HYD GRP													
POTENTIAL FROST ACTION													
PROP 061	2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0			
2													
3													
4													
5													
6													
FOOTNOTES													
SANITARY FACILITIES													
KEYING ONLY													
FOOTNOTES													
SOURCE MATERIAL													
SEPTIC 071	2	SEPTIC TANK	SEVERE - SLOPE	FILL	191			ROADFILL		POOR - SLOPE			
2													
3													
4													
5													
LAGOON 081	2	SEWAGE LAGOONS	SEVERE - SLOPE	SAND	201			SAND		POOR - EXCESS FINES, LARGE STONES			
2													
3													
4													
5													
TRENCH 091	2	SANITARY LANDFILL (TRENCH)	SEVERE - SLOPE, SEEPAGE, SMALL STONES	GRAVEL	211			GRAVEL		POOR - EXCESS FINES, LARGE STONES			
2													
3													
4													
5													
SANARE 101	2	SANITARY LANDFILL (AREA)	SEVERE - SLOPE, SEEPAGE	SOIL	221			TOPSOIL		POOR - SLOPE, SMALL STONES, LARGE STONES			
2													
3													
4													
5													
COVER 111	2	DAILY COVER FOR LANDFILL	POOR - SLOPE, SMALL STONES										
2													
3													
4													
5													
FOOTNOTES													
COMMUNITY DEVELOPMENT													
KEYING ONLY													
FOOTNOTES													
WATER MANAGEMENT													
EXCAV 121	2	SHALLOW EXCAVATIONS	SEVERE - SLOPE, SMALL STONES	DIKES	241			EMBANKMENTS		LARGE STONES, LOW STRENGTH, PILING, SEEPAGE			
2													
3													
4													
5													
DWEL 131	2	DWELLINGS WITHOUT BASEMENTS	SEVERE - SLOPE	PONDS	251			EXCAVATED PONDS		NO WATER			
2													
3													
4													
5													
DWEL 141	2	DWELLINGS WITH BASEMENTS	SEVERE - SLOPE	DRAIN	261			DRAINAGE		NOT NEEDED			
2													
3													
4													
5													
BLDGS 151	2	SMALL COMMERCIAL BUILDINGS	SEVERE - SLOPE	IRRIG	271			IRRIGATION		SLOPE, FAST INTAKE, SEEPAGE			
2													
3													
4													
5													
ROADS 161	2	LOCAL ROADS AND STREETS	SEVERE - SLOPE	TERRAC	281			TERRACES AND DIVERSIONS		SLOPE, LARGE STONES			
2													
3													
4													
5													
FOOTNOTES													
REGIONAL INTERPRETATIONS													
KEYING ONLY													
FOOTNOTES													
GRASSED WATERWAYS													
REGION 171	2												
2													
3													
4													
5													
REGION 181	2												
2													
3													
4													
5													

KEYING ONLY			UNIT NAME: <u>SOUTHACE</u>		RECREATION		FOOTNOTE									
RECORD NO.	CONTROL WORD	NO.	UNIT MODIFIER:		KEYING ONLY	FOOTNOTE										
	CAMPS	301	SEVERE - SLOPE		PLAYGRD	321	SEVERE - SLOPE									
		2				2										
		3				3										
		4				4										
		5				5										
	PICNIC	311	SEVERE - SLOPE		PATHS	331	SEVERE - SLOPE									
		2				2										
		3				3										
		4				4										
		5				5										
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)																
CROPHD		451	CLASS- DETERMINING PHASE		CAPABILITY											
		2														
		3														
	CROPS	341	ALL		7E											
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9														
		351														
		2														
		3														
WOODLAND SUITABILITY																
WOODS		361	CLASS- DETERMINING PHASE		ORD SYM	MANAGEMENT PROBLEMS			POTENTIAL PRODUCTIVITY		TREES TO PLANT					
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9														
		371														
		2														
		3														
		4														
		5														
		6														
WIND BREAKS																
WINDBK		381	CLASS- DETERMINING PHASE		SPECIES		HT	SPECIES		HT	SPECIES		HT			
		2			NONE											
		3														
		4														
		5														
		6														
WILDLIFE HABITAT SUITABILITY																
WILDLF		391	CLASS- DETERMINING PHASE		POTENTIAL FOR HABITAT ELEMENTS				POTENTIAL AS HABITAT FOR:							
		2			GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWO TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
		3	ALL		V. POOR	V. POOR	FAIR	—	—	FAIR	V. POOR	V. POOR	POOR	—	V. POOR	FAIR
		4														
		5														
		6														
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)																
PHASE		401	SY 10-14" RPT		COMMON PLANT NAME		PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE								
		2														
	PLANT	411														
		2			BIG SAGEBRUSH		ARTR2	10								
		3			BLUEGRASS WHEATGRASS		AGSP	15								
		4			LETTUCE LEAF NEEDLEGRASS		STLE4	5								
		5			PRAIRIE DUNEGRASS		KOCR	5								
		6			SANDBERG BLUEGRASS		POSE	5								
		7			SERVICEBERRY		AMELA	5								
		8			SNOWBERRY		SYMPH	5								
		9			SPIKE FESCUE		HEKT	10								
		421			THICKSPIKE WHEATGRASS		AGDA	30								
		2					PDEF	5								
		3					PPGG	5								
		4														
		5														
		6														
		7														
POTENTIAL PRODUCTION (LBS./AC. DRY WT):																
PRODUC		431			FAVORABLE YEARS		1,600									
		2			NORMAL YEARS		1,200									
		3			UNFAVORABLE YEARS		900									
FOOTNOTES																
NOTES		441														
		2														
		3														
		4														
		5														
		6														
		7														

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SOIL CONSERVATION SERVICE

SOIL SURVEY INTERPRETATIONS

KEYING ONLY	
RECORD NO.	CONTROL NO.
MLRA	001
STATE	011
CLASS	021
OESCR	031
	2
	3
	4
	5

MLRA(S) 34 STATE WYOMING RECORD NO. KIND OF UNIT SERIES UNIT NAME SPOOL
 CLASSIFICATION AND BRIEF SOIL DESCRIPTION AUTHOR(S) HBR DATE 4/74 REVISED UNIT MODIFIER
 LITHIC TORRIPSAMMENT; MIXED, FRTGID
 THE SPOOL SERIES ARE WELL DRAINED VERY SHALLOW SOILS FORMED IN RESIDUUM FROM SANDSTONE ON STEEP ROCKY SLOPES. SLOPES ARE 15 TO 30 PERCENT. ELEVATION IS 6300 TO 7500 FEET. PPT IS 10 TO 12 INCHES. MAST IS ABOUT 44°F., AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS GRAYISH BROWN LOAMY SAND ABOUT 8 INCH THICK, UNDERLAIN BY HARD SANDSTONE.

FOOTNOTE		ESTIMATED SOIL PROPERTIES									
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT	PLASTICITY INDEX	
PROP 041	0-8 LS, S	SM	A-2	0	4	10	40	200			
2	Bt UNB				95-100	95-100	50-75	15-30	NP	NP	
3											
4											
5											
6											

DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
PROP 051	60-20	.06-.08	6.6-7.4	—	LOW	STEEL	CONCRETE	K	T	
2						LOW	LOW	.17	1	2
3										
4										
5										
6										

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
PROP 061	NONE		76			—		3-10	HARD	—		D	LOW

FOOTNOTES		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL	
SEPTIC 071	2	SEPTIC TANK ABSORPTION FIELDS	SEVERE - SLOPE, DEPTH TO ROCK	FILL	191		2	POOR - THIN LAYER	
	3				2		3		
	4				3		4		
	5				4		5		
LAGOON 081	2	SEWAGE LAGOONS	SEVERE - SLOPE, DEPTH TO ROCK	SAND	201		2	UNSUITED	
	3				2		3		
	4				3		4		
	5				4		5		
TRENCH 091	2	SANITARY LANDFILL (TRENCH)	15-25% SEVERE - DEPTH TO ROCK 25+% SEVERE SLOPE, DEPTH TO ROCK	GRAVEL	211		2	UNSUITED	
	3				2		3		
	4				3		4		
	5				4		5		
SANARE 101	2	SANITARY LANDFILL (AREA)	SEVERE - SLOPE	SOIL	221		2	POOR - THIN LAYER, TOO SANDY	
	3				2		3		
	4				3		4		
	5				4		5		

FOOTNOTES		WATER MANAGEMENT	
COVER 111	2	DAILY COVER FOR LANDFILL	POOR - SLOPE, THIN LAYER
	3		
	4		
	5		

FOOTNOTES		COMMUNITY DEVELOPMENT		FOOTNOTES		WATER MANAGEMENT	
EXCAV 121	2	SHALLOW EXCAVATIONS	SEVERE - SLOPE, DEPTH TO ROCK	PONDERS 231	2	POND RESERVOIR AREA	SLOPE, DEPTH TO ROCK
	3				2		
	4				3		
	5				4		
DWEL 131	2	DWELLINGS WITHOUT BASEMENTS	SEVERE - SLOPE, DEPTH TO ROCK	DIKES 241	2	EMBANKMENTS	

KEYING ONLY			UNIT NAME: <u>SP00L</u>		UNIT MODIFIER:		RECREATION		FOOTNOTE							
RECORD NO.	WORD	NO.	CAMP AREAS		PICNIC AREAS		PLAYGROUNDS		PATHS AND TRAILS							
	CAMPS	301	SEVERE - SLOPE, ROCK OUTCROPS		SEVERE - SLOPE		PLAYGROUNDS		SEVERE - SLOPE, DEPTH TO ROCK							
		2														
		3														
		4														
		5														
	PICNIC	311					15-25% MODERATE - SLOPE, TOO SANDY									
		2					25% SEVERE - SLOPE									
		3														
		4														
		5														
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)																
CROPHD		451	CLASS-DETERMINING PHASE		CAPABILITY											
		2														
		3														
CROPS		341	ALL		75											
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9														
		351														
		2														
		3														
WOODLAND SUITABILITY																
WOODS		361	CLASS-DETERMINING PHASE		ORD SYM	MANAGEMENT PROBLEMS			POTENTIAL PRODUCTIVITY		TREES TO PLANT					
		2	ALL			EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDEX				
		3									JUNIPER					
		4														
		5														
		6														
		7														
		8														
		9														
		371														
		2														
		3														
		4														
		5														
		6														
WIND BREAKS																
WINDBK		381	CLASS-DETERMINING PHASE		SPECIES	HT	SPECIES		HT	SPECIES		HT				
		2	NONE													
		3														
		4														
		5														
		6														
WILDLIFE HABITAT SUITABILITY																
WILDLF		391	CLASS-DETERMINING PHASE		GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
		2	ALL		Y. POOR	V. POOR	POOR	V. POOR	V. POOR	POOR	V. POOR	V. POOR	V. POOR	—	V. POOR	POOR
		3														
		4														
		5														
		6														
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)																
PHASE		401	COMMON PLANT NAME		PLANT SYMBOL (NLSN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE										
		2				ALL										
PLANT		411	ANTelope BITTERBRUSH		PUTR 2	5										
		2	BLACK SAGEBRUSH		ARARN	5										
		3	BLUEBUNCH WHEATGRASS		ABSP	30										
		4	BUTTLEBRUSH SQUIRRELTAIL		SIHY	5										
		5	JUNIPER		JUNIP	5										
		6	LOW RABBITBRUSH		CHVIH 2	5										
		7	MOUNTAIN MAHOGANY		CERCO	15										
		8	PRAIRIE JUNEGRASS		KOLR	5										
		9	SANDBERG BLUEGRASS		POSE	5										
		421	SKUNKBUSH SUMAC		RHTR	5										
		2			UUUU	15										
		3														
		4														
		5														
		6														
PRODUC		431	POTENTIAL PRODUCTION (LBS./AC. DRY WT):													
		2	FAVORABLE YEARS		600											
		3	NORMAL YEARS		450											
			UNFAVORABLE YEARS		250											
NOTES		441	NOT USUALLY UTILIZED BY LIVESTOCK.													
		2														
		3														
		4														
		5														
		6														
		7														

MLRA(S) 47 KIND OF UNIT VARIANT UNIT NAME STARLEY
STATE WYOMING RECORD NO. AUTHOR(S) HBR DATE 1/75 REVISED UNIT MODIFIER VERY SHALLOW VARIANT
CLASSIFICATION AND BRIEF SOIL DESCRIPTION

LITHIC, CRYOBOROLL, LOAMY-SKELETAL, MIXED.
THE STABLE, VERY SHALLOW VARIANT. SOILS ARE WELL DRAINED, FORMED IN RESIDUUM FROM SANDY SHALE ON GENTLY SLOPING TO MODERATELY STEEP UPLAND RIDGES AND MOUNTAIN SLOPES. SLOPES ARE 3 TO 20 PERCENT. ELEVATION IS 7500 TO 8500 FEET. PPT IS 13 TO 16 INCHES. LAST IS ABOUT 43°F, AND THE FFS IS 60 TO 90 DAYS. TYPICALLY THE PROFILE IS REDDISH GRAY, VERY CHANNERY LOAM ABOUT 6 INCHES THICK UNDERLAIN BY SANDSTONE.

[illegible][illegible]

FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEOROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
NONE			>6			—	RIPPABLE	3-10	—	—		D	LOW

FOOTNOTES	SANITARY FACILITIES	KEYING ONLY	FOOTNOTES	SOURCE MATERIAL
SEPTIC TANK ABSORPTION FIELDS	3-15%: SEVERE - DEPTH TO ROCK	FILL 191	ROADFILL	POOR - THIN LAYER
	15+ %: SEVERE - SLOPE, DEPTH TO ROCK			
SEWAGE LAGOONS	3-7 %: SEVERE - DEPTH TO ROCK	SAND 201	SAND	UNSUITED
	7+ %: SEVERE - SLOPE, DEPTH TO ROCK			
SANITARY LANDFILL (TRENCH)	SEVERE - DEPTH TO ROCK	GRAVEL 211	GRAVEL	UNSUITED
SANITARY LANDFILL (AREA)	3-8%: SLIGHT	SOIL 221	TOPSOIL	POOR - THIN LAYER, AREA RECLAIM, SMALL STONES
	8-15%: MODERATE - SLOPE			
	15+ %: SEVERE - SLOPE			

DAILY COVER FOR LANDFILL	3-15%: POOR - DEPTH TO ROCK			FOOTNOTES	WATER MANAGEMENT
	15+ %: POOR - SLOPE, DEPTH TO ROCK	PONDRS	231		SLOPE, DEPTH TO ROCK
			2	POND	
			3	RESERVOIR	

FOOTNOTES	COMMUNITY DEVELOPMENT	DIKES	EMBANKMENTS DIKES AND LEVEES	THIN LAYER
SHALLOW EXCAVATIONS	3-15%: SEVERE - DEPTH TO ROCK	241		
	15+ %: SEVERE - SLOPE, DEPTH TO ROCK			

DWELLINGS WITHOUT BASEMENTS	3-15% SEVERE - DEPTH TO ROCK	PONDAQ	251	EXCAVATED PONDS AQUIFER FED	NO WATER
	15+% SEVERE - SLOPE, DEPTH TO ROCK		2		
			3		
			4		
			5		

DWELLINGS WITH BASEMENTS	SEVERE - DEPTH TO ROCK	DRAIN	261	DRAINAGE	NOT NEEDED
			2		
			3		
			4		
			5		

SMALL COMMERCIAL BUILDINGS	3-8%: DEPTH TO ROCK	IRRIG	271	IRRIGATION
	8+0%: SLOPE, DEPTH TO ROCK		2	
			3	
			4	
			5	

LOCAL ROADS AND STREETS	3-15%: SEVERE - DEPTH TO ROCK	TERRAC	281	TERRACES AND DIVERSIONS	SLOPE, DEPTH TO ROCK
	15+ %: SEVERE, SLOPE, DEPTH TO ROCK		2		
			3		
			4		
			5		

FOOTNOTES		REGIONAL INTERPRETATIONS		WATERW		291	GRASSED WATERWAYS
POTENTIAL	LOW					2	
SLIDE						3	
HAZARD						4	
						5	

UNIT NAME: STARLEY, VERY SHALLOW VARIANT
 UNIT MODIFIER: _____

KEYING ONLY			RECREATION											
RECORD NO.	CONTROL WORD	NO.	KEYING ONLY											
CAMPS		301	PLAYGDS	321										
		2		2										
		3		3										
		4		4										
		5		5										
PICNIC		311	PATHS	331										
		2		2										
		3		3										
		4		4										
		5		5										
<p>FOOTNOTE</p> <p>CAMP AREAS</p> <p>0-8%: MODERATE - SMALL STONES, ROCK OUTCROP</p> <p>8-15%: MODERATE - SLOPE, SMALL STONES, ROCK OUTCROP</p> <p>15+ %: SEVERE - SLOPE</p> <p>PICNIC AREAS</p> <p>0-8%: MODERATE - SMALL STONES, ROCK OUTCROP</p> <p>8-15%: MODERATE - SLOPE, SMALL STONES, ROCK OUTCROP</p> <p>15+ %: SEVERE - SLOPE</p> <p>PLAYGROUNDS</p> <p>3-6%: SEVERE - DEPTH TO ROCK, SMALL STONES</p> <p>6+ %: SEVERE - SLOPE, DEPTH TO ROCK, SMALL STONES</p> <p>PATHS AND TRAILS</p> <p>0-15%: MODERATE - SMALL STONES, ROCK OUTCROP</p> <p>15-25%: MODERATE - SLOPE, SMALL STONES, ROCK OUTCROP</p>														
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)														
CROPHD		451												
		2												
		3												
CROPS		341												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		351												
		2												
		3												
WOODLAND SUITABILITY														
WOODS		361												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		371												
		2												
		3												
		4												
		5												
		6												
WIND BREAKS														
WINDBK		381												
		2												
		3												
		4												
		5												
		6												
WILDLIFE HABITAT SUITABILITY														
WILDLF		391												
		2												
		3												
		4												
		5												
		6												
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)														
PHASE		401												
		2												
PLANT		411												
		2												
		3												
		4												
		5												
		6												
		7												
		8												
		9												
		421												
		2												
		3												
		4												
		5												
		6												
PRODUC		431												
		2												
		3												
NOTES		441												
		2												
		3												
		4												
		5												
		6												
		7												

SOIL SURVEY INTERPRETATIONS

KEYING ONLY			RECORD NO.		CONTROL		MLRA(S)		KIND OF UNIT		UNIT NAME							
RECORD NO.	WORD	NO.	MLRA	001	STATE	011	STATE	011	MLRA(S)	34, 47	SERIES	TEELER						
<div> <div>STATE WYOMING</div> <div>RECORD NO.</div> <div>AUTHOR(S) HBR</div> <div>DATE 4/74</div> <div>REVISED</div> <div>UNIT MODIFIER</div> </div>																		
CLASSIFICATION AND BRIEF SOIL DESCRIPTION																		
CLASS	021	ARGIC, GRYBOBOLLY, LOAMY-SKELETAL, MIXED																
DESCR	031	THE TEELER SERIES ARE WELL DRAINED SOILS FORMED IN GRAVELLY ALLUVIUM ON GENTLY SLOPING TO STEEP ALLUVIAL FANS, TERRACES AND MOUNTAIN SIDES. SLOPES ARE 3 TO 30 PERCENT. ELEVATION IS 7400 TO 9000 FEET. PPT IS 13 TO 14 INCHES. MAIST IS ABOUT 43°F, AND THE FFS IS 50 TO 70 DAYS. TYPICALLY, THE SURFACE LAYER IS BROWN GRAVELLY SANDY LOAM ABOUT 4 INCHES THICK. THE SUBSOIL IS BROWN GRAVELLY SANDY CLAY LOAM ABOUT 16 INCHES THICK. THE SUBSTRATUM IS PINKISH GRAY VERY GRAVELLY SANDY LOAM TO 23 INCHES, UNDERLAIN BY CHALKY SANDY LOAM TO 60 INCHES.																
FOOTNOTE																		
ESTIMATED SOIL PROPERTIES																		
		DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. > 3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQ. LIMIT	PLAS. INDEX						
							4	10	40	200								
PROP	041	0-10	GR-SL	SM, SM-SC, SC	A-2	0-10	60-80	50-75	35-65	15-30	NY-30	5-10						
	2	10-60	CR-SL	SM, SM-SC, SC	A-2	10-40	61-82	45-70	35-65	15-30	NY-30	NP-10						
	3																	
	4																	
	5																	
	6																	
		DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS	WIND EROD. GROUP							
								STEEL	CONCRETE	K	T							
PROP	051	SAME DEPTH AS ABOVE	0.6-2.0	.07-.13	7.4-8.4		LOW	LOW	LOW	15	5	3						
	2		2.1-6.0	.14-.08	7.2-8.4		LOW	LOW	LOW									
	3																	
	4																	
	5																	
	6																	
		FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE	HYD GRP	POTENTIAL FROST ACTION				
		FREQUENCY			DURATION			MONTHS			DEPTH (IN)		HARDNESS		INITIAL (IN)	TOTAL (IN)		
PROP	061																LOW	
FOOTNOTES																		
SANITARY FACILITIES																		
SEPTIC	071	3-15% SEVERE - SLOPE, SMALL STONES																
	2	8-15% MODERATE - SLOPE, SMALL STONES																
	3	15-25% SEVERE - SLOPE, SMALL STONES																
	4																	
	5																	
LAGOON	081	3-7% SEVERE - SLOPE, SMALL STONES																
	2	7-10% SEVERE - SLOPE, SMALL STONES																
	3																	
	4																	
	5																	
TRENCH	091	3-25% SEVERE - SLOPE, SMALL STONES																
	2	25-50% SEVERE - SLOPE, SMALL STONES																
	3																	
	4																	
	5																	
SANARE	101	3-15% SEVERE - SLOPE, SMALL STONES																
	2	15-25% SEVERE - SLOPE, SMALL STONES																
	3																	
	4																	
	5																	
COVER	111	3-15% SEVERE - SLOPE, SMALL STONES																
	2	15-25% SEVERE - SLOPE, SMALL STONES																
	3																	
	4																	
	5																	
FOOTNOTES																		
COMMUNITY DEVELOPMENT																		
EXCAV	121	3-15% SEVERE - SLOPE, SMALL STONES																
	2	15-25% SEVERE - SLOPE, SMALL STONES																
	3																	
	4																	
	5																	
DWEL	131	3-8% MODERATE - LARGE STONES																
	2	8-15% MODERATE - SLOPE, LARGE STONES																
	3	15-25% SEVERE - SLOPE																
	4																	
	5																	
DWEL	141	3-15% MODERATE - LARGE STONES																
	2	15-25% MODERATE - SLOPE, LARGE STONES																
	3	25-50% SEVERE - SLOPE																
	4																	
	5																	
BLOGS	151	3-4% MODERATE - LARGE STONES																
	2	4-8% MODERATE - SLOPE, LARGE STONES																
	3	8-15% SEVERE - SLOPE																
	4																	
	5																	
ROADS	161	3-8% SLIGHT																
	2	8-15% MODERATE - SLOPE																
	3	15-25% SEVERE - SLOPE																
	4																	
	5																	
FOOTNOTES																		
REGIONAL INTERPRETATIONS																		
REGION	171																	
	2																	
	3																	
	4																	
	5																	
REGION	181																	
	2																	
	3																	
	4																	
	5																	
FOOTNOTES																		
SOURCE MATERIAL																		
ROADFILL	191	3-15% GOOD																
	2	15-25% FAIR - SLOPE																
	3	25-50% POOR - SLOPE																
	4																	
	5																	
SAND	201	POOR - EXCESS FINES, LARGE STONES																
	2																	
	3																	
	4																	
	5																	
GRAVEL	211	POOR - EXCESS FINES, LARGE STONES																
	2																	
	3																	
	4																	
	5																	
TOPSOIL	221	3-15% POOR - SMALL STONES, LARGE STONES																
	2	15-25% POOR - SLOPE, SMALL STONES, LARGE STONES																
	3																	
	4																	
	5																	
FOOTNOTES																		
WATER MANAGEMENT																		
POND RESERVOIR AREA	231	SLOPE, SEEPAGE																
	2																	
	3																	
	4																	
	5																	
EMBANKMENTS DIKES AND LEVEES	241	LARGE STONES, LOW STRENGTH, PIPING SEEPAGE																
	2																	
	3																	
	4																	
	5																	
EXCAVATED PONDS AQUIFER FED	251	NO WATER																
	2																	
	3																	
	4																	
	5																	
DRAINAGE	261	NOT NEEDED																
	2																	
	3																	
	4																	
	5																	
IRRIGATION	271	SLOPE, FAST INTAKE, SEEPAGE																
	2																	
	3																	
	4																	
	5																	
TERRACES AND DIVERSIONS	281	SLOPE, LARGE STONES																
	2																	
	3																	
	4																	
	5																	
GRASSED WATERWAYS	291																	
	2																	
	3																	
	4																	
	5																	

KEYING ONLY			UNIT NAME: <u>TEELER</u>		RECREATION											
RECORD NO.	CONTROL	NO.	UNIT MODIFIER:		KEYING ONLY	FOOTNOTE										
	WORD															
	CAMPS	301	FOOTNOTE		PLAYGDS	321										
		2	3-8% MODERATE - SMALL STONES			2										
		3	8-15% MODERATE - SLOPE, SMALL STONES			3										
		4	15+% SEVERE - SLOPE			4										
		5				5										
	PICNIC	311	FOOTNOTE		PATHS	331										
		2	3-8% MODERATE - SMALL STONES			2										
		3	8-15% MODERATE - SLOPE, SMALL STONES			3										
		4	15+% SEVERE - SLOPE			4										
		5				5										
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)																
	CROPHD	451	FOOTNOTE													
		2	CLASS-DETERMINING PHASE		CAPABILITY											
		3			NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
	CROPS	341	3-6%		6E	3E										
		2	6-10%		6E	4E										
		3	10-30%		6E	6E										
		4														
		5														
		6														
		7														
		8														
		9														
		351														
		2														
		3														
WOODLAND SUITABILITY																
	WOODS	361	FOOTNOTE		MANAGEMENT PROBLEMS			POTENTIAL PRODUCTIVITY			TREES TO PLANT					
		2	CLASS-DETERMINING PHASE		ORD SYM	EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SITE INDEX				
		3									NONE					
		4														
		5														
		6														
		7														
		8														
		9														
		371														
		2														
		3														
		4														
		5														
		6														
WIND BREAKS																
	WINDBK	381	FOOTNOTE		CLASS-DETERMINING PHASE		SPECIES	HT	SPECIES		HT	SPECIES		HT		
		2			NONE											
		3														
		4														
		5														
		6														
WILDLIFE HABITAT SUITABILITY																
	WILOLF	391	FOOTNOTE		POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR			
		2	CLASS-DETERMINING PHASE		GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
		3	3-10%		POOR	FAIR	GOOD	—	—	GOOD	POOR	V. POOR	FAIR	—	V. POOR	GOOD
		4	10%+		POOR	FAIR	GOOD	—	—	GOOD	V. POOR	V. POOR	FAIR	—	V. POOR	GOOD
		5														
		6														
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)																
	PHASE	401	FOOTNOTE		COMMON PLANT NAME		PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE								
		2	Ly 14-16" ANT.					ALL								
	PLANT	411			ANTELOPE BITTERBRUSH		PUTR2	10								
		2			BIG SAGEBRUSH		ARTR2	10								
		3			CANBY BLUEGRASS		POCA	10								
		4			COLUMBIA NEEDLEGRASS		STOQ3	5								
		5			IDAHO FESCUE		FEID	20								
		6			MOUNTAIN BROMEGRASS		BRCA5	5								
		7			SPIKE FESCUE		HEKT	10								
		8			THICKSPIKE WHEATGRASS		AGDA	15								
		9					PDEF	10								
		421					PPGG	5								
		2														
		3														
		4														
		5														
		6														
		7														
POTENTIAL PRODUCTION (LBS./AC. DRY WT):																
	PRODUC	431			FAVORABLE YEARS		2400									
		2			NORMAL YEARS		2000									
		3			UNFAVORABLE YEARS		1400									
FOOTNOTES																
	NOTES	441														
		2														
		3														
		4														
		5														
		6														
		7														

[illegible]

SOIL SURVEY INTERPRETATIONS

KEYING ONLY		
RECORD NO.	CONTROL	
MLRA	WORD	NO.
STATE	MLRA	001
	STATE	011
CLASS	DESCR	021
		031
		2
		3
		4
		5
		6

MLRA(S) 34	KIND OF UNIT SERIES	UNIT NAME THERMOPOLIS
STATE WYOMING	RECORD NO. 	AUTHOR(S) HBR
DATE 4/77 REVISED UNIT MODIFIER 		
CLASSIFICATION AND BRIEF SOIL DESCRIPTION		

USTIC TORRIORTHENT; LOAMY, MIXED, (CALCAREOUS), FRIGID, SHALLOW
THE THERMOPOLIS SERIES ARE WELL DRAINED, SHALLOW SOILS FORMED IN RESIDUUM FROM SHALE ON GENTLY SLOPING STEEP UPLANDS. SLOPES ARE 3 TO 30 PERCENT. ELEVATION IS 6300 TO 7800 FEET. PPT IS 10 TO 12 INCHES. MAINT IS ABOUT 64°F., AND THE FPS IS 60 TO 90 DAYS. TYPICALLY, THE PROFILE IS BROWN LOAM ABOUT 17 INCHES THICK UNDERLAIN BY SOFT PLATY SHALE.

FOOTNOTE		ESTIMATED SOIL PROPERTIES										
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUO LIMIT	PLAS- TICITY INDEX		
					4	10	40	200				
0-17	L	ML-CL, ML, CL	A-4	0	85-100	75-100	65-95	50-75	15-35	5-10		
17	WB											

PROP	DESCR	DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (pH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
								STEEL	CONCRETE	K	T	
051	2	SAME DEPTH AS ABOVE	0.6-2.0	.16-.18	7.7-8.4	—	LOW	HIGH	HIGH	28	1	4L
	3											
	4											
	5											
	6											

PROP	DESCR	FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
		FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
061	2	NONE			76			—		10-20	RIPPABLE	—		D	MODERATE

FOOTNOTES		SANITARY FACILITIES		KEYING ONLY		FOOTNOTES		SOURCE MATERIAL			
SEPTIC TANK ABSORPTION FIELDS	1	2-15% SEVERE-DEPTH TO ROCK		FILL	191	ROADFILL	1	POOR-THIN LAYER			
		15+% SEVERE-SLOPE, DEPTH TO ROCK			2						
					3						
					4						
					5						
SEWAGE LAGOONS	1	3-7% SEVERE-DEPTH TO ROCK		SAND	201	SAND	1	UNSUITED			
		7+% SEVERE-SLOPE, DEPTH TO ROCK			2						
					3						
					4						
					5						
SANITARY LANDFILL (TRENCH)	1	3-25% SEVERE-DEPTH TO ROCK		GRAVEL	211	GRAVEL	1	UNSUITED			
		25+% SEVERE-SLOPE, DEPTH TO ROCK			2						
					3						
					4						
					5						
SANITARY LANDFILL (AREA)	1	3-8% SLIGHT		SOIL	221	TOPSOIL	1	POOR-THIN LAYER, AREA RECLAIM			
		8-15% MODERATE-SLOPE			2						
		15+% SEVERE-SLOPE			3						
					4						
					5						
DAILY COVER FOR LANDFILL	1	3-15% POOR-THIN LAYER				FOOTNOTES	1	WATER MANAGEMENT			
		15+% POOR-SLOPE, THIN LAYER							POND RESERVOIR	1	SLOPE, DEPTH TO ROCK
			PONDERS	231							
				2							
				3							

FOOTNOTES		COMMUNITY DEVELOPMENT		RESERVOIR AREA	
SHALLOW EXCAVATIONS	3-8 % MODERATE - DEPTH TO ROCK	DIKES	241	EMBANKMENTS DIKES AND LEVEES	THIN LAYER, PIPING, LOW STRENGTH
	8-15 % MODERATE - SLOPE, DEPTH TO ROCK		2		
	15+ % SEVERE - SLOPE		3		
			4		
			5		
DWELLINGS WITHOUT BASEMENTS	3-8 % MODERATE - DEPTH TO ROCK, LOW STRENGTH	PONDAGE	251	EXCAVATED PONDS AQUIFER FED	NO WATER
	8-15 % MODERATE - SLOPE, DEPTH TO ROCK, LOW STRENGTH		2		
	15+ % SEVERE - SLOPE		3		
			4		
			5		
DWELLINGS WITH BASEMENTS	3-15 % MODERATE - DEPTH TO ROCK, LOW STRENGTH	DRAIN	261	DRAINAGE	NOT NEEDED
	15+25 % MODERATE - SLOPE, DEPTH TO ROCK, LOW STRENGTH		2		
	25+ % SEVERE - SLOPE		3		
			4		
			5		
SMALL COMMERCIAL BUILDINGS	3-4 % MODERATE - DEPTH TO ROCK, LOW STRENGTH	IRRIG	271	IRRIGATION	
	4-8 % MODERATE - SLOPE, DEPTH TO ROCK LOW STRENGTH		2		
	8+ % SEVERE - SLOPE		3		
			4		
			5		
LOCAL ROADS AND STREETS	3-8 % MODERATE - DEPTH TO ROCK, LOW STRENGTH	TERRACE	281	TERRACES AND DIVERSIONS	SLOPE, DEPTH TO ROCK
	8-15 % MODERATE - SLOPE, DEPTH TO ROCK, LOW STRENGTH		2		
	15+ % SEVERE - SLOPE		3		
			4		
			5		

FOOTNOTES		REGIONAL INTERPRETATIONS		WATERW		291		GRASSED WATERWAYS	
POTENTIAL SLOPE HAZARD	MEDIUM						2		
							3		
							4		
							5		

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	CAMPS	301
		2
		3
		4
		5
	PICNIC	311
		2
		3
		4
		5

UNIT NAME: **THERMOPOLIS**
UNIT MODIFIER:

(2)

RECREATION

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	PLAYGROUNDS	321
		2
		3
		4
		5
	PATHS	331
		2
		3
		4
		5

FOOTNOTE

3-8%: SLIGHT
8-15%: MODERATE-SLOPE
15+%: SEVERE-SLOPE

PLAYGROUNDS

PATHS AND TRAILS

3-8%: SLIGHT
8-15%: MODERATE-SLOPE
15+%: SEVERE-SLOPE

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	CROPHD	451
		2
		3
	CROPS	341
		2
		3
		4
		5
		6
		7
		8
		9
		351
		2
		3

FOOTNOTE

CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	CAPABILITY																
		NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR	NIRR	IRR
ALL	7E																

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	WOODS	361
		2
		3
		4
		5
		6
		7
		8
		9
		371
		2
		3
		4
		5
		6

FOOTNOTE

WOODLAND SUITABILITY

CLASS- DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS					POTENTIAL PRODUCTIVITY		TREES TO PLANT
		EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.	WINDYTH. HAZARD	PLANT COMPET.	IMPORTANT TREES	SIZE INDEX	
ALL							JUNIPER		

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	WINDBK	381
		2
		3
		4
		5
		6

FOOTNOTE

WIND BREAKS

CLASS-DETERMINING PHASE		SPECIES		HT	SPECIES		HT	SPECIES		HT
		NONE								

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	WILDLF	391
		2
		3
		4
		5
		6

FOOTNOTE

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS								POTENTIAL AS HABITAT FOR:			
	GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
ALL	V. POOR	V. POOR	FAIR	—	—	FAIR	V. POOR	V. POOR	POOR	—	V. POOR	FAIR

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	PHASE	401
		2
	PLANT	411
		2
		3
		4
		5
		6
		7
		8
		9
		421
		2
		3
		4
		5
		6

FOOTNOTE

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE

COMMON PLANT NAME		PLANT SYMBOL (NLSPN)										
5/14/10-14" P.Z.			ALL									
ANTELOPE BITTERBRUSH		PUTR 2	5									
BIG SAGEBRUSH		ARTR 2	5									
BLUEBUNCH WHEATGRASS		AGSP	20									
INDIAN RICEGRASS		ORHY	10									
LETTFMAN NEEDLEGRASS		STLE 4	5									
LOW RABBITBRUSH		CHVH 2	5									
NEEDLE-AND-THREAD		STCO 4	10									
NEEDLELEAF THREAD		CAEL 2	5									
SANDBERG BLUEGRASS		POSE	5									
THICK-PIKE WHEATGRASS		AGDA	15									
		UUUU	15									

KEYING ONLY		
RECORD NO.	CONTROL WORD	NO.
	PRODUC	431
		2
		3
	NOTES	441
		2
		3
		4
		5
		6
		7

POTENTIAL PRODUCTION (LBS./AC. DRY WT):
FAVORABLE YEARS 1200
NORMAL YEARS 900
UNFAVORABLE YEARS 700

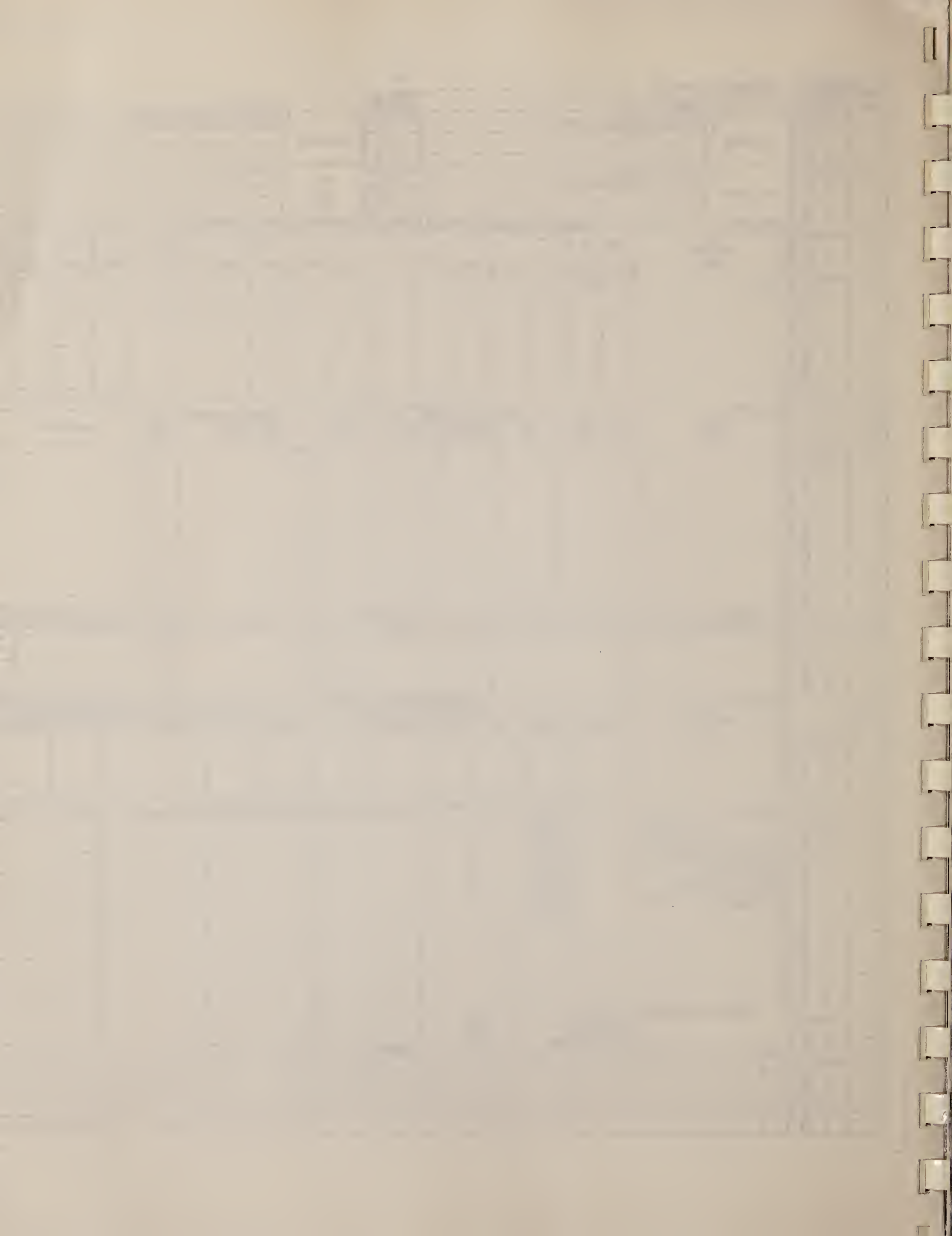
FOOTNOTES

NOT USUALLY UTILIZED BY LIVESTOCK

KEYING ONLY		
RECORD NO.	CONTROL	
	WORD	NO.
	MLRA	001
	STATE	011
	CLASS	021
	DESCR	031
		2
		3
		4
	↓	↑5
	PROP	041
		2
		3
		4
		5
	↓	↑6
	PROP	051
		2
		3
		4
		5
	↓	↑6
	PROP	061
	SEPTIC	071
		2
		3
		4
	↓	↑5
	LAGOON	081
		2
		3
		4
	↓	↑5
	TRENCH	091
		2
		3
		4
	↓	↑5
	SANARE	101
		2
		3
		4
	↓	↑5
	COVER	111
		2
		3
		4
	↓	↑5
	EXCAV	121
		2
		3
		4
	↓	↑5
	DWEL	131
		2
		3
		4
	↓	↑5
	DWEL	141
		2
		3
		4
	↓	↑5
	BLOGS	151
		2
		3
		4
	↓	↑5
	ROADS	161
		2
		3
		4
	↓	↑5
	REGION	171
		2
		3
	↓	↑4
	REGION	181
		2
		3
	↓	↑3

[illegible]

KEYING ONLY			UNIT NAME: TISWORTH		RECREATION		FOOTNOTE									
RECORD NO.	CONTROL WORD	NO.	UNIT MODIFIER:		KEYING ONLY	FOOTNOTE										
	CAMPS	301	FOOTNOTE		PLAYGRD	321	FOOTNOTE									
		2	3-8%: SLIGHT			2	3-6%: MODERATE-SLOPE									
		3	8-10%: MODERATE-SLOPE			3	6-10%: SEVERE-SLOPE									
		4				4										
		5				5										
	PICNIC	311	FOOTNOTE		PATHS	331	FOOTNOTE									
		2	3-8%: SLIGHT			2	SLIGHT									
		3	8-10%: MODERATE-SLOPE			3										
		4				4										
		5				5										
CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)																
CROPHD		451	CLASS-DETERMINING PHASE		CAPABILITY											
		2			NIRR	IRR										
		3			NIRR	IRR										
		4			NIRR	IRR										
		5			NIRR	IRR										
		6			NIRR	IRR										
		7			NIRR	IRR										
		8			NIRR	IRR										
		9			NIRR	IRR										
		351			NIRR	IRR										
		2			NIRR	IRR										
		3			NIRR	IRR										
WOODLAND SUITABILITY																
WOODS		361	CLASS-DETERMINING PHASE		ORD SYM	MANAGEMENT PROBLEMS		POTENTIAL PRODUCTIVITY								
		2				EROSION HAZARD	EQUIP. LIMIT	SEEDLING MORT'Y.								
		3				WINOTH. HAZARD	PLANT COMPET.	IMPORTANT TREES								
		4						SITE INDEX								
		5						TREES TO PLANT								
		6														
		7														
		8														
		9														
		371														
		2														
		3														
		4														
		5														
		6														
WIND BREAKS																
WINDBK		381	CLASS-DETERMINING PHASE		SPECIES	HT	SPECIES	HT								
		2	NONE													
		3														
		4														
		5														
		6														
WILDLIFE HABITAT SUITABILITY																
WILDLF		391	CLASS-DETERMINING PHASE		POTENTIAL FOR HABITAT ELEMENTS					POTENTIAL AS HABITAT FOR:						
		2			GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	OPENLAND WILDLIFE	WOODLAND WILDLIFE	WETLAND WILDLIFE	RANGELAND WILDLIFE
		3														
		4														
		5														
		6														
POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)																
PHASE		401	SD 10-14" PPT		PLANT SYMBOL (NLSPN)		PERCENTAGE COMPOSITION (ORY WEIGHT) BY CLASS DETERMINING PHASE									
		2	COMMON PLANT NAME		ALL											
		3														
		4														
		5														
		6														
		7														
		8														
		9														
		421														
		2														
		3														
		4														
		5														
		6														
		7														
		8														
		9														
POTENTIAL PRODUCTION (LBS./AC. ORY WT):																
PRODUC		431	FAVORABLE YEARS		750											
		2	NORMAL YEARS		600											
		3	UNFAVORABLE YEARS		400											
FOOTNOTES																
NOTES		441	SYM.													
		2														
		3														
		4														
		5														
		6														
		7														



SOIL SURVEY INTERPRETATIONS

KEYING ONLY			SOIL SURVEY INTERPRETATIONS																																									
RECORD NO.	CONTROL		MLRA		NO.	WORD		STATE		011																																		
MLRA(S)			34			KIND OF UNIT		VARIANT		UNIT NAME		TISWORTH																																
STATE			WYOMING			RECORD NO.		AUTHOR(S)		DATE		4/74																																
CLASSIFICATION AND BRIEF SOIL DESCRIPTION			BOROLIC NATRARGIDS, FINE, MONTMORILLONITIC			REVISED		UNIT MODIFIER		FINE																																		
DESCR			031			THE TISWORTH SERIES ARE WELL DRAINED SOILS FORMED IN ALLUVIUM ON NEARLY LEVEL TO MODERATELY SLOPING ALLUVIAL FANS. SLOPES ARE 0 TO 10 PERCENT. PRECIPITATION IS 10 TO 12 INCHES. MEAN ANNUAL SOIL TEMPERATURE IS 42 TO 44°F. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWNISH GRAY CLAY LOAM ABOUT 2 INCHES THICK. THE UPPER SUBSOIL LAYER IS LIGHT BROWN CLAY ABOUT 4 INCHES THICK. THE LOWER SUBSOIL LAYER IS PINK CLAY ABOUT 16 INCHES THICK. THE SUBSTRATUM IS PINK CLAY LOAM TO 60 INCHES OR MORE.																																						
FOOTNOTE			ESTIMATED SOIL PROPERTIES																																									
DEPTH (IN.)			USDA TEXTURE			UNIFIED			AASHO			FRACT. >3 IN. (PCT)			PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUID LIMIT		PLASTICITY INDEX																							
PROP			041			0-22			C, CL			CL, CH			A-7			0			90-100				90-100		85-100		70-95		45-65		20-35											
			2			22-60			CL			CL			A-7			0			90-100				90-100		85-100		65-80		40-50		20-25											
			3																																									
			4																																									
			5																																									
			6																																									
DEPTH (IN.)			PERMEABILITY (IN/HR)			AVAILABLE WATER CAPACITY (IN/IN)			SOIL REACTION (pH)			SALINITY (MMHOS/CM)			SHRINK-SWELL POTENTIAL			CORROSIVITY			EROSION FACTORS			WIND EROD. GROUP																				
PROP			051			.06-.2			.08-.14			9.0-9.2			2-4			HIGH			HIGH			STEEL			CONCRETE			K			T			4L								
			2			.06-.2			.10-.15			7.9-9.0			2-4			HIGH			HIGH			HIGH			HIGH			.32			5			4L								
			3																																									
			4																																									
			5																																									
			6																																									
FLOODING			FREQUENCY			DURATION			MONTHS			DEPTH (FT)			KIND			MONTHS			CEMENTED PAN			BEDROCK			SUBSIDENCE			HYD GRP			POTENTIAL FROST ACTION											
PROP			061			NONE						>6									--			HARDNESS			DEPTH (IN)			HARDNESS			INITIAL (IN)			TOTAL (IN)			D			LOW		
FOOTNOTES			SANITARY FACILITIES			KEYING ONLY			FOOTNOTES			SOURCE MATERIAL																																
SEPTIC			071			SEVERE - PERCS SLOWLY			FILL			191			ROADFILL			POOR - LOW STRENGTH, SHRINK-SWELL																										
			2									2																																
			3									3																																
			4									4																																
			5									5																																
LAGOON			081			0-2%: SLIGHT			SAND			201			SAND			UNSUITED																										
			2			2-7%: MODERATE - SLOPE						2																																
			3			7%: SEVERE - SLOPE						3																																
			4									4																																
			5									5																																
TRENCH			091			SEVERE - TOO CLAYEY			GRAVEL			211			GRAVEL			UNSUITED																										
			2									2																																
			3									3																																
			4									4																																
			5									5																																
SANARE			101			0-8%: SLIGHT			SOIL			221			TOPSOIL			POOR - TOO CLAYEY, EXCESS ALKALI																										
			2			8-10%: MODERATE - SLOPE						2																																
			3									3																																
			4									4																																
			5									5																																
COVER			111			POOR - TOO CLAYEY									FOOTNOTES			WATER MANAGEMENT																										
			2						PONDRS			231			POND RESERVOIR AREA			0-2%: FAVORABLE																										
			3									3						2%: SLOPE																										
			4																																									

SOIL SURVEY INTERPRETATIONS

KEYING ONLY	
RECORD NO.	CONTROL
WORD NO.	MLRA 001
STATE 011	
MLRA(S) <u>24, 47</u>	
STATE <u>WYOMING</u>	RECORD NO. <u> </u>
AUTHOR(S) <u>HGR</u>	
DATE <u>7/74</u>	
REVISED <u> </u>	
UNIT NAME <u>UINTA</u>	
UNIT MODIFIER <u> </u>	
CLASS 021	
DESCR 031	
TYPIC ORYOPORALP; FINE-LOAMY, MIXED	
THE UINTA SERIES ARE WELL DRAINED SOIL FORMED IN GLACIAL TILL OR ALLUVIUM ON SLOPING TO STEEP MOUNTAIN SIDES. SLOPES ARE 10 TO 30 PERCENT. ELEVATION IS 8300 TO 9000 FEET. PPT IS 15 TO 19 INCHES. MAST IS ABOUT 40°F., AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE SURFACE IS COVERED BY AN ORGANIC LAYER ABOUT 1 INCH THICK UNDERLAIN BY A DARK GRAY SANDY LOAM LAYER ABOUT 1 INCH THICK. THE SUBSURFACE LAYER IS PINKISH GRAY SANDY LOAM AND LOAM ABOUT 10 INCHES THICK. THE SUBSOIL AND SUBSTRATUM ARE REDDISH BROWN CLAY LOAM TO 60 INCHES.	

CLASS	021	TYPIC CRYOPORALF; FINE-LOAMY, MIXED										
DESCR	031	THE UINIA SERIES ARE WELL DRAINED SOIL FORMED IN GLACIAL TILL OR ALLUVIUM ON SLOPING TO STEEP MOUNTAIN SIDES. SLOPES ARE 10 TO 30 PERCENT.										
		ELEVATION IS 8300 TO 9000 FEET. PPT IS 15 TO 19 INCHES. MAST IS ABOUT 40°F., AND THE FFS IS 60 TO 90 DAYS. TYPICALLY, THE SURFACE IS										
		COVERED BY AN ORGANIC LAYER ABOUT 1 INCH THICK UNDERLAIN BY A DARK GRAY SANDY LOAM LAYER ABOUT 1 INCH THICK. THE SUBSURFACE LAYER IS										
		PINKISH GRAY SANDY LOAM AND LOAM ABOUT 10 INCHES THICK. THE SUBSOIL AND SUBSTRATUM ARE REDDISH BROWN CLAY LOAM TO 60 INCHES.										
		FOOTNOTE										
		ESTIMATED SOIL PROPERTIES										
		DEPTH (IN.)	USOA TEXTURE	UNIFIED	AASHO	FRACT. >3 IN. (PCT)	PERCENT OF MATERIAL LESS THAN 3 IN. PASSING SIEVE				LIQUO LIMIT	PLAS- TICITY INDEX
							4	10	40	200		
PROP	041	0-11	SL, L	CL-ML, SM-SG	A-2, A-4, A-6	0-15	75-100	70-100	50-90	30-70	15-35	5-15
	2	11-60	CL	CL	A-6, A-7	0-15	75-100	70-100	65-100	50-75	30-45	15-20
	3											
	4											
	5											
	6											

PROP	051	DEPTH (IN.)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK-SWELL POTENTIAL	CORROSIVITY		EROSION FACTORS		WIND EROD. GROUP
								STEEL	CONCRETE	K	T	
	2	SAME	0.6-2.0	.10-.18	6.5-7.0	—	LOW	HIGH	LOW	20	5	6
	3	DEPTH AS ABOVE	0.6-2.0	.15-.18	6.8-8.0	—	MODERATE	HIGH	LOW			
	4											
	5											
	6											

PROP	061	FLOODING			HIGH WATER TABLE			CEMENTED PAN		BEDROCK		SUBSIDENCE		HYD GRP	POTENTIAL FROST ACTION
		FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL (IN)	TOTAL (IN)		
	2	NONE			26					260				B	MODERATE

FOOTNOTES		SANITARY FACILITIES			KEYING ONLY		FOOTNOTES		SOURCE MATERIAL		
SEPTIC	071	SEPTIC TANK ABSORPTION FIELDS	10-15%: MODERATE-SLOPE, PERCS SLOWLY			FILL	191	ROADFILL	10-15%: FAIR-FROST ACTION, SHRINK-SWELL		
	2		15+ %: SEVERE-SLOPE				2		LOW STRENGTH		
	3						3		15-25%: FAIR-SLOPE, FROST ACTION, SHRINK-SWELL		
	4						4		25+ %: POOR-SLOPE		
	5						5				
LAGOON	081	SEWAGE LAGOONS	SEVERE-SLOPE			SAND	201	SAND	UNSUITED		
	2						2				
	3						3				
	4						4				
	5						5				
TRENCH	091	SANITARY LANDFILL (TRENCH)	10-15 %: SLIGHT			GRAVEL	211	GRAVEL	UNSUITED		
	2		15-25 %: MODERATE-SLOPE				2				
	3		25+ %: SEVERE-SLOPE				3				
	4						4				
	5						5				
SANARE	101	SANITARY LANDFILL (AREA)	10-15 %: MODERATE-SLOPE			SOIL	221	TOPSOIL	10-15 %: FAIR-SLOPE, SMALL STONE, TOO CLAYEY		
	2		15+ %: SEVERE-SLOPE				2		15+ %: POOR-SLOPE		
	3						3				
	4						4				
	5						5				

COVER	111	DAILY COVER FOR LANDFILL	10-15% FAIR - SLOPE, 100 CLAYEY					FOOTNOTES		WATER MANAGEMENT	
	2		15+ %: POOR - SLOPE			PONDRES 231				SLOPE	
	3										
	4										
	5										
								POND RESERVOIR AREA			

FOOTNOTES		COMMUNITY DEVELOPMENT			KEYING ONLY		FOOTNOTES		WATER MANAGEMENT		
EXCAV	121	SHALLOW EXCAVATIONS	10-15 %: MODERATE-SLOPE			OIKES	241	EMBANKMENTS DIKES AND LEVEES	LOW STRENGTH, PIPING		
	2		15+ %: SEVERE-SLOPE				2				
	3						3				
	4						4				
	5						5				
DWEL	131	DWELLINGS WITHOUT BASEMENTS	10-15 %: MODERATE-SLOPE, SHRINK-SWELL			PONDAQ	251	EXCAVATED PONDS AQUIFER FED	NO WATER		
	2		15+ %: SEVERE-SLOPE				2				
	3						3				
	4						4				
	5						5				
DWEL	141	DWELLINGS WITH BASEMENTS	10-15 %: MODERATE-SHRINK-SWELL, LOW STRENGTH			DRAIN	261	DRAINAGE	NOT NEEDED		
	2		15-25 %: MODERATE-SLOPE, LOW STRENGTH, SHRINK-SWELL				2				
	3		25+ %: SEVERE-SLOPE				3				
	4						4				
	5						5				
BLDGS	151	SMALL COMMERCIAL BUILDINGS	SEVERE-SLOPE			IRRIG	271	IRRIGATION			
	2						2				
	3						3				
	4						4				
	5						5				
ROADS	161	LOCAL ROADS AND STREETS	10-15 %: MODERATE-SLOPE, FROST ACTION, SHRINK-SWELL			TERRAC	281	TERRACES AND DIVERSIONS	SLOPE		
	2		15+ %: SEVERE-SLOPE				2				
	3						3				
	4						4				
	5						5				

FOOTNOTES		REGIONAL INTERPRETATIONS			KEYING ONLY		FOOTNOTES		GRASSED WATERWAYS		
REGION	171	POTENTIAL SLIDE HAZARD	MEDIUM				2				
	2						3				
	3						4				
	4						5				
	5						6				
REGION	181						2				
	2						3				
	3						4				
	4						5				
	5						6				

CONCLUSIONS

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